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North River Salmon Counting Tower
Project Summary Report, 1996

by

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TABLE OF CONTENTS

List of Tables	ii
List of Figures	iii
List of Appendix Tables.	v
Introduction	1
Objectives	1
Methods	1
Results	2
Discussion	3
Acknowledgments.	4
Literature Cited.	4
Tables.	5
Figures.	14
Appendix Tables.	25

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1.	Expanded daily and cumulative migration of all salmon species past the North River counting tower, Norton Sound, 1996.	5
2.	Expanded daily hourly chum salmon migration past the North River counting tower, Norton Sound, 1996.	6
3.	Expanded daily hourly pink salmon migration past the North River counting tower, Norton Sound, 1996.	7
4.	Expanded daily hourly king salmon migration past the North River counting tower, Norton Sound, 1996.	8
5.	Expanded daily hourly coho salmon migration past the North River counting tower, Norton Sound, 1996.	9
6.	Reported hourly chum salmon observations at the North River counting tower, Norton Sound, 1996.	10
7.	Reported hourly pink salmon observations at the North River counting tower, Norton Sound, 1996.	11
8.	Reported hourly king salmon observations at the North River counting tower, 1996.	12
9.	Reported hourly coho salmon observations at the North River counting tower, 1996.	13

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1.	Area location map of the North River counting tower project site, Norton Sound, 1996.	14
2.	Cumulative migration of all salmon species past the North River counting tower, Norton Sound, 1996.	15
3.	Daily chum salmon migration past the North River counting tower, Norton Sound, 1996.	16
4.	Cumulative chum salmon migration past the North River counting tower, Norton Sound, 1996.	16
5.	Daily pink salmon migration past the North River counting tower, Norton Sound, 1996.	17
6.	Cumulative pink salmon migration past the North River counting tower, Norton Sound, 1996.	17
7.	Daily king salmon migration past the North River counting tower, Norton Sound, 1996.	18
8.	Cumulative king salmon migration past the North River counting tower, Norton Sound, 1996.	18
9.	Daily coho salmon migration past the North River counting tower, Norton Sound, 1996.	19
10.	Cumulative coho salmon migration past the North River counting tower, Norton Sound, 1996.	19
11.	Diurnal pattern of chum salmon migration past the North River counting tower, Norton Sound, 1996.	20
12.	Diurnal pattern of pink salmon migration past the North River counting tower, Norton Sound, 1996.	20
13.	Diurnal pattern of king salmon migration past the North River counting tower, Norton Sound, 1996.	21
14.	Diurnal pattern of coho salmon migration past the North River counting tower, Norton Sound, 1996.	21

<u>Figure</u>		<u>Page</u>
15.	Cumulative chum salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 22
16.	Even year cumulative pink salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 22
17.	Odd year cumulative pink salmon passage past the North River counting tower, Norton Sound, 1973 and 1975. 23
18.	Cumulative king salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 23
19.	Cumulative coho salmon passage past the North River counting tower, Norton Sound, 1985 and 1996. 24

LIST OF APPENDIX TABLES

<u>Table</u>		<u>Page</u>
1.	Daily cumulative chum salmon escapement past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 25
2.	Daily cumulative pink salmon escapement past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 26
3.	Daily cumulative king salmon escapement past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996. 27
4.	Daily cumulative coho salmon escapement past the North River counting tower, Norton Sound, 1985 and 1996. 28

INTRODUCTION

The North River counting tower is a cooperative project funded and operated by the Kawerak Corporation. The Alaska Department of Fish & Game (ADF&G) provided equipment for this project. ADF&G analyzed and expanded the tower count data to produce this report, as part of its contribution to this cooperative effort.

The North River is the largest of the five major tributaries of the Unalakleet River, which is the largest salmon producing river in Norton Sound. This year a salmon counting tower was reestablished on the North River about two miles above its confluence with the Unalakleet River (Figure 1). A counting tower was previously operated on the North River for the three years from 1972 through 1974 near the North River bridge (Regnart and Trasky 1973 and Cunningham 1973, 1974 and 1975) and for the three years from 1984 through 1986 (Lean 1985, 1986 and 1987). Chum salmon were the primary species of harvest for the Unalakleet subdistrict commercial fishery. The project was discontinued at that time because of a lack of funding and because the small chum salmon run on the North River was not considered to be a reliable index of chum salmon abundance for the entire Unalakleet River system. Recent increasing commercial importance of pink, king and coho salmon combined with the relatively large runs of these species in the North River, and the availability of funding combined to make this project feasible again.

OBJECTIVES

To obtain daily and seasonal information concerning the timing and magnitude of the chum, pink, king and coho salmon escapement to the North River.

METHODS

The North River counting tower camp is located on Unalakleet Native Corporation land. The camp is approximately 20 minutes by boat from the village of Unalakleet.

A tent camp with two tent frames and an outhouse was established during early June. A scaffolding tower was erected on the bank of the river to serve as an observation platform. A vinyl canvas flash panel was placed on the river bottom directly in front of the tower. A weir to direct the fish over the flash panel was built from the mid-stream end of the flash panel to the opposite bank.

Counting began on 16 June and ended on 5 July. The crew counted 24 half-hour counts each day. One day off was scheduled each week. The daily counts considered in this report run from 0000 hours to 2400 hours. The counts for each half hour shift were doubled to produce the reported hourly counts for each species. Each day the reported

hourly counts were added to produce a daily subtotal. Every day, the daily and cumulative subtotals for each species were relayed to the ADF&G Unalakleet office by radio.

The expanded counts for this report were calculated using the following methods. The counts for the days off were estimated by adding the counts of each hour of the day before to the counts of each hour of the day following and dividing the result by two, giving expanded hourly counts for the hours of the day off. The expanded counts for periods of time greater than one day missed because of high water were linearly interpolated as follows. If two days were missed the count for the two missing days was calculated by adding the counts of each hour of the day before the missed period to the counts of each hour of the day following the missed period and dividing the result by two. If three days were missed the count for the middle missing day was calculated by adding the counts of each hour of the day before the missed period to the counts of each hour of the day following the missed period and dividing the result by two; the count for the first missing day was calculated by adding the counts of each hour of the day before the missed period to the calculated counts of each hour of the middle missing day and dividing the result by two; the count for the third missing day was calculated by adding the counts of each hour of the day following the missed period to the counts of each hour of the calculated missing day and dividing the result by two. This expansion was done for all species counted.

RESULTS

Table 1 shows the expanded daily and cumulative totals for each salmon species. The reported total hourly counts were: 7,964 chum salmon, 284,406 pink salmon, 1,006 king salmon, and 1,086 coho salmon (Tables 6-9). The expanded counts were: 9,789 chum salmon, 332,539 pink salmon, 1,197 king salmon, and 1,229 coho salmon (Tables 2-5).

King salmon were observed on 16 June, the first day of counting. Chum and pink salmon were first observed on 17 June, the second day of counting. Coho salmon were first observed on 9 July. The daily peak count of 892 chum salmon occurred on 5 July; the daily peak count of 60,570 pink salmon occurred on 6 July; the daily peak count of 161 king salmon on 5 July; the peak daily count of 316 coho salmon occurred on 23 July (Table 1).

Approximately two thirds of the chum salmon passage occurred during the two weeks from 3 July through 16 July (Table 2 and Figures 3 and 4). Approximately 86% of the pink salmon passage occurred during the two weeks from 4 July to 17 July (Table 3 and Figures 5 and 6). Similarly, approximately 86% of the king salmon passage occurred during the two weeks from 3 July through 16 July (Table 4 and Figures 7 and 8). The first seventeen days of the coho salmon escapement passed before the tower stopped operations for the season (Table 5 and Figures 9 and 10).

All species counted exhibited a diurnal pattern of migration past the counting tower. During the thirteen hour period from 1800 through 0600 hours, 87% of the chum salmon passed the tower (Table 2 and Figure 11). During the twelve hour period from 1600 through 0300 hours, 81% of the pink salmon passed the tower (Table 3 and Figure 12). The diurnal pattern of king salmon migration was not as pronounced as for the other species (Table 4 and Figure 13). During the seventeen hour period from 1500 through 0700 hours, 91% of the coho salmon passed the tower (Table 5 and Figure 14).

An aerial survey of the North River counted 220 chum salmon on 10 July, 1996. The total season expanded tower count of chum salmon was 9,789. The aerial survey counted 2% of the total season expanded tower count of chum salmon. The aerial survey counted 170 chum salmon above the counting tower on 10 July, when the cumulative tower count of chum salmon was 5,268. The aerial survey counted 3% of the cumulative tower count on 8 July (Table 1).

An aerial survey of the North River counted 125,500 pink salmon on 10 July, 1996. The total season expanded tower count of pink salmon was 332,539. The aerial survey counted 38% of the total season expanded tower count of pink salmon. The aerial survey counted 122,900 pink salmon above the counting tower on 10 July, when the cumulative tower count of pink salmon was 213,351. The aerial survey counted 58% of the cumulative tower count on 10 July (Table 1).

An aerial survey of the North River counted 106 king salmon on 10 July, 1996. The total season expanded tower count of king salmon was 1,197. The aerial survey counted 9% of the total season expanded tower count of king salmon. The aerial survey counted 104 king salmon above the counting tower on 10 July, when the cumulative tower count of king salmon was 708. The aerial survey counted 15% of the cumulative tower count on 10 July (Table 1).

An aerial survey of the North River counted 917 coho salmon on 27 August, 1996, which was well after the tower project was concluded on 25 July, making comparison the the two data sources inappropriate.

DISCUSSION

This was the first year since 1986 that the North River counting tower operated.

The chum salmon escapement past the counting tower was more than double the previous best recorded in 1985 (Appendix Table 1 and Figure 15). The even year pink salmon escapement past the counting tower was the second best recorded, 72% of the 1984 record level. The even year pink salmon escapement was 135% of the average for all even years of available data (Appendix Table 2 and Figure 16). The odd year pink salmon escapements are shown in Appendix Table 2 and Figure 17. The king salmon escapement past the counting tower was the fourth best recorded and was less than half

the size of the 1984 record level. The escapement of 1,197 king salmon was approximately equal to the average of 1,162 king salmon (Appendix Table 3 and Figure 18). The coho salmon escapement counts for 1985 and 1996 are shown in Appendix Table 4 and Figure 19, although the 1996 coho salmon project data are incomplete. Counting stopped on 25 July and was not resumed because of high water.

ACKNOWLEDGEMENTS

The ADF&G thanks Kawerak Corporation for operating this project and in particular the tower crew who operated the tower. A draft of this report was reviewed by Larry Buklis.

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Table 1. Expanded daily and cumulative migration of all salmon species past the North River counting tower, Norton Sound, 1996.

Date	Daily Chum	Cumulative Chum	Daily Pink	Cumulative Pink	Daily King	Cumulative King	Daily Coho	Cumulative Coho
16-Jun	0	0	0	0	8	8	0	0
17-Jun	16	16	2	2	-2	6	0	0
18-Jun	-12	4	2	4	-2	4	0	0
19-Jun	-22	-18	0	4	-4	0	0	0
20-Jun	8	-10	0	4	0	0	0	0
21-Jun	4	-6	3	7	-6	-6	0	0
22-Jun	0	-6	6	13	-3	-9	0	0
23-Jun	0	-6	56	69	0	-9	0	0
24-Jun	174	168	114	183	4	-5	0	0
25-Jun	12	180	94	277	-4	-9	0	0
26-Jun	21	201	189	466	-3	-12	0	0
27-Jun	25	226	206	672	-1	-13	0	0
28-Jun	27	253	286	958	-1	-14	0	0
29-Jun	36	289	381	1,339	0	-14	0	0
30-Jun	46	335	344	1,683	2	-12	0	0
1-Jul	162	497	754	2,437	10	-2	0	0
2-Jul	240	737	866	3,303	8	6	0	0
3-Jul	848	1,585	3,606	6,909	38	44	0	0
4-Jul	883	2,468	21,429	28,338	101	145	0	0
5-Jul	892	3,360	35,867	64,205	161	306	0	0
6-Jul	556	3,916	60,570	124,775	110	416	0	0
7-Jul	530	4,446	34,752	159,527	112	528	0	0
8-Jul	468	4,914	24,962	184,489	78	606	0	0
9-Jul	124	5,038	13,764	198,253	46	652	6	6
10-Jul	230	5,268	15,098	213,351	56	708	2	8
11-Jul	342	5,610	14,080	227,431	30	738	0	8
12-Jul	366	5,976	13,545	240,976	55	793	4	12
13-Jul	492	6,468	19,198	260,174	76	869	17	29
14-Jul	266	6,734	9,574	269,748	58	927	12	41
15-Jul	388	7,122	10,214	279,962	78	1,005	12	53
16-Jul	218	7,340	8,044	288,006	28	1,033	20	73
17-Jul	110	7,450	5,076	293,082	26	1,059	30	103
18-Jul	370	7,820	6,300	299,382	18	1,077	46	149
19-Jul	530	8,350	7,604	306,986	36	1,113	130	279
20-Jul	321	8,671	7,117	314,103	40	1,153	162	441
21-Jul	212	8,883	5,798	319,901	26	1,179	152	593
22-Jul	290	9,173	5,044	324,945	8	1,187	88	681
23-Jul	328	9,501	4,348	329,293	6	1,193	316	997
24-Jul	214	9,715	2,612	331,905	4	1,197	178	1,175
25-Jul	74	9,789	634	332,539	0	1,197	54	1,229

Table 2. Expanded daily hourly chum salmon migration past the North River counting tower, Norton Sound, 1996.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total			
Start of the counting season																													
16-Jun																											0	0.0%	
17-Jun	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	16	0.2%
18-Jun	0	0	-4	-2	-4	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-12	-0.1%	
19-Jun	0	0	0	-12	-4	-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-22	-0.2%	
20-Jun	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	0.1%	
21-Jun	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0.0%	
22-Jun	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0.0%	
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	2	0	0.0%	
24-Jun	62	56	8	34	12	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	174	1.8%	
25-Jun	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0	0	0	0	1	1	0	0	12	0.1%		
26-Jun	1	3	5	2	0	1	2	0	0	0	1	0	0	0	-1	0	5	-1	0	0	0	2	1	0	0	21	0.2%		
27-Jun	1	4	9	3	0	1	2	0	0	0	1	0	0	0	-1	0	3	-1	0	0	0	2	1	0	0	25	0.3%		
28-Jun	1	4	9	3	0	1	2	0	0	0	1	0	0	0	-1	0	3	-1	0	0	0	3	2	0	0	27	0.3%		
29-Jun	2	5	14	5	0	2	2	0	0	0	2	0	0	0	-2	0	2	-2	0	0	0	4	2	0	0	36	0.4%		
30-Jun	2	6	18	6	0	2	2	0	0	0	2	0	0	0	-2	0	0	-2	0	2	2	0	8	0	0	46	0.5%		
1-Jul	0	18	14	72	2	0	2	0	-2	0	0	0	2	0	0	0	2	0	4	2	-2	20	14	14	162	1.7%			
2-Jul	4	2	6	0	-2	0	0	0	0	0	0	2	0	0	0	10	30	8	32	38	10	14	86	0	240	2.5%			
3-Jul	24	30	20	14	4	0	0	2	0	0	0	0	0	0	0	2	4	6	26	24	32	340	256	64	848	8.7%			
4-Jul	50	76	66	11	4	4	6	5	0	2	0	0	1	0	0	11	22	14	58	74	56	210	158	55	883	9.0%			
5-Jul	50	122	112	8	4	8	12	8	0	4	0	0	2	0	0	20	40	22	90	124	80	80	60	46	892	9.1%			
6-Jul	76	78	36	20	34	30	16	8	0	0	0	0	2	2	8	6	28	24	24	6	26	18	38	76	556	5.7%			
7-Jul	44	42	24	20	18	40	32	12	0	2	0	2	0	2	6	0	34	2	6	26	30	46	48	94	530	5.4%			
8-Jul	122	86	16	18	34	18	12	4	2	16	0	0	0	0	4	2	8	14	16	12	32	18	2	32	468	4.8%			
9-Jul	20	22	8	0	2	4	8	10	0	4	0	4	0	0	0	0	2	34	6	0	-2	0	2	0	124	1.3%			
10-Jul	42	4	0	6	8	4	0	2	0	2	0	0	0	0	0	2	4	4	16	38	22	14	46	4	12	230	2.3%		
11-Jul	22	10	8	4	2	8	2	2	0	2	4	2	2	0	2	8	8	4	18	58	22	46	42	66	342	3.5%			
12-Jul	8	18	14	4	12	20	12	14	12	2	8	0	6	6	1	8	5	7	13	38	39	47	31	41	366	3.7%			
13-Jul	10	15	10	22	34	36	52	66	11	4	6	5	6	3	1	8	5	7	13	38	56	48	20	16	492	5.0%			
14-Jul	12	12	6	2	10	30	10	14	10	6	4	10	6	0	0	8	2	10	8	18	20	12	10	46	266	2.7%			
15-Jul	24	22	18	8	0	14	78	28	14	2	2	0	0	8	14	8	8	10	14	46	28	14	12	16	388	4.0%			
16-Jul	24	16	6	16	16	44	38	10	4	-2	2	0	4	0	4	4	4	2	2	2	6	2	12	218	2.2%				
17-Jul	2	8	0	0	0	16	18	0	2	6	0	2	2	2	2	2	2	4	2	12	8	4	10	6	110	1.1%			
18-Jul	14	8	6	10	2	6	14	12	4	0	6	0	0	2	4	4	4	0	8	6	10	24	42	38	150	3.8%			
19-Jul	134	108	32	8	2	22	8	16	2	0	5	0	0	1	4	5	2	11	11	15	18	25	23	78	530	5.4%			
20-Jul	68	55	21	5	9	12	24	18	3	2	5	0	0	1	4	6	4	14	16	20	12	8	8	6	321	3.3%			
21-Jul	2	2	10	2	16	2	40	20	4	4	4	0	0	0	0	0	0	2	4	2	24	20	18	36	212	2.2%			
22-Jul	16	22	8	8	4	4	28	18	0	2	0	0	0	0	-2	0	4	28	12	60	24	10	18	26	290	3.0%			
23-Jul	36	14	38	12	2	24	12	8	2	2	0	0	0	0	6	22	18	14	26	18	8	38	6	22	328	3.4%			
24-Jul	8	22	4	8	14	16	6	0	8	8	0	6	4	0	2	2	0	12	28	10	26	20	8	2	214	2.2%			
25-Jul	0	14	4	22	6	2	12	8	6	-2	2	0	End of counting season													74	0.8%		
Total =	889	906	549	339	241	365	454	285	82	66	55	31	39	27	57	137	255	266	473	677	589	1,144	939	924	9,789				
	9.1%	9.3%	5.6%	3.5%	2.5%	3.7%	4.6%	2.9%	0.8%	0.7%	0.6%	0.3%	0.4%	0.3%	0.6%	1.4%	2.6%	2.7%	4.8%	6.9%	6.0%	11.7%	9.6%	9.4%	100.0%				

Table 3. Expanded daily hourly pink salmon migration past the North River counting tower, Norton Sound, 1996.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
16-Jun																			0	0	0	0	0	0	0	0	0.0%
17-Jun	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0.0%	
18-Jun	0	0	0	0	0	0	0	-2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0%	
19-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0.0%	
22-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0.0%	
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	50	0.0%	
24-Jun	68	18	0	0	10	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	4	-2	10	0	114	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	21	11	43	13	2	94	0.0%	
26-Jun	0	7	7	7	0	0	0	0	0	0	-1	0	0	0	-3	0	2	2	4	42	17	87	15	3	189	0.1%	
27-Jun	0	14	14	13	0	0	0	0	0	0	-2	0	0	0	-5	0	1	3	4	42	17	87	15	3	206	0.1%	
28-Jun	0	14	14	13	0	0	0	0	0	0	-2	0	0	0	-5	0	1	3	6	63	24	132	18	5	286	0.1%	
29-Jun	0	21	21	20	0	0	0	0	0	0	-3	0	0	0	-8	0	1	5	8	84	30	176	20	6	381	0.1%	
30-Jun	0	28	28	26	0	0	0	0	0	0	-4	0	0	0	-10	0	0	6	10	8	106	44	16	86	344	0.1%	
1-Jul	6	34	24	88	-2	4	0	0	-2	0	4	0	2	2	0	4	26	44	82	86	30	160	60	102	754	0.2%	
2-Jul	50	60	16	0	6	2	0	0	2	6	30	16	6	4	12	20	50	116	160	70	42	198	0	866	0.3%		
3-Jul	222	130	20	26	54	16	36	8	10	2	0	24	4	4	32	30	34	64	106	180	214	996	986	408	3,606	1.1%	
4-Jul	3,607	469	339	60	149	303	369	324	53	21	4	31	24	14	71	373	508	250	763	2,788	2,667	2,822	2,770	2,650	21,429	6.4%	
5-Jul	3,607	808	658	94	244	590	702	640	96	40	8	38	44	24	110	716	982	436	1,420	5,396	5,120	4,648	4,554	4,892	35,867	10.8%	
6-Jul	6,992	7,890	3,524	1,436	2,158	3,366	2,640	704	-96	-174	24	60	22	16	108	270	980	2,154	3,838	658	5,406	4,652	4,694	9,248	60,570	18.2%	
7-Jul	5,032	5,474	1,318	376	264	662	1,548	736	264	90	18	4	10	42	346	0	1,580	40	454	942	1,638	3,338	7,106	3,470	34,752	10.5%	
8-Jul	3,624	2,722	1,016	366	560	1,060	1,810	352	564	828	10	0	0	0	0	8	370	742	508	652	4,730	774	446	3,820	24,962	7.5%	
9-Jul	3,366	1,304	830	54	82	208	1,320	720	222	204	190	174	22	28	128	222	272	3,052	464	42	172	116	312	260	13,764	4.1%	
10-Jul	3,002	464	56	50	134	178	80	130	10	18	38	64	6	10	66	150	168	762	1,606	1,712	2,106	2,028	566	1,694	15,098	4.5%	
11-Jul	2,612	346	70	44	98	218	352	146	68	112	134	78	170	18	274	338	320	200	514	2,038	1,572	948	1,236	2,174	14,080	4.2%	
12-Jul	838	358	284	62	134	412	552	444	318	268	78	102	250	52	204	253	308	306	535	1,570	1,976	1,631	960	1,650	13,545	4.1%	
13-Jul	725	486	261	482	1,680	1,274	1,044	2,546	246	239	117	146	184	88	204	253	308	306	535	1,570	2,380	2,314	684	1,126	19,198	5.8%	
14-Jul	612	614	238	42	74	564	376	328	174	210	156	190	118	124	134	168	296	412	556	1,102	982	676	746	682	9,574	2.9%	
15-Jul	1,280	836	212	38	56	454	1,158	638	236	134	56	32	44	76	194	350	434	460	596	1,032	828	312	328	430	10,214	3.1%	
16-Jul	738	794	518	110	216	616	926	638	188	-8	36	36	34	28	66	236	442	190	310	246	290	504	440	450	8,044	2.4%	
17-Jul	318	146	10	20	20	226	338	200	120	86	32	42	70	70	130	216	308	388	164	398	416	444	412	502	5,076	1.5%	
18-Jul	350	274	66	62	44	112	382	342	206	72	92	62	104	88	114	70	192	270	244	458	488	922	342	944	6,300	1.9%	
19-Jul	1,026	730	200	80	56	252	300	334	114	40	80	51	56	70	156	152	248	511	440	504	413	663	437	691	7,604	2.3%	
20-Jul	696	411	129	53	41	170	374	316	158	126	80	51	56	70	198	234	304	752	636	550	338	404	532	438	7,117	2.1%	
21-Jul	366	92	58	26	26	88	448	298	202	212	68	40	8	52	78	178	342	354	214	396	540	508	812	392	5,798	1.7%	
22-Jul	308	284	154	70	72	96	386	216	96	64	36	36	22	32	80	108	162	388	372	618	478	448	210	308	5,044	1.5%	
23-Jul	340	106	86	74	106	250	310	162	22	36	12	8	14	-2	98	394	328	434	344	228	138	306	272	282	4,348	1.3%	
24-Jul	176	96	52	52	46	126	108	66	38	14	26	40	32	80	54	174	320	388	102	64	168	120	118	152	2,612	0.8%	
25-Jul	52	74	82	60	50	84	164	42	12	-4	12	6												634	0.2%		
All =	40,013	25,102	10,305	3,904	6,378	11,331	15,723	10,328	3,319	2,634	1,305	1,349	1,312	992	2,818	4,909	9,263	12,972	14,953	23,650	33,369	30,343	29,340	36,927	332,539		
	12.0%	7.5%	3.1%	1.2%	1.9%	3.4%	4.7%	3.1%	1.0%	0.8%	0.4%	0.4%	0.4%	0.4%	0.3%	0.8%	1.5%	2.8%	3.9%	4.5%	7.1%	10.0%	9.1%	8.8%	11.1%	100.0%	

Table 4. Expanded daily hourly king salmon migration past the North River counting tower, Norton Sound, 1996.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
Start of the counting season																									8	0.7%	
16-Jun																										0	
17-Jun	2	0	0	0	0	0	2	-4	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	-2	-0.2%
18-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	-2	-0.2%
19-Jun	0	0	-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-0.3%
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Jun	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6	-0.5%
22-Jun	0	0	-3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	-3	-0.3%
23-Jun	0	0	-4	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jun	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3%
25-Jun	0	0	-2	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-0.3%
26-Jun	0	0	-2	0	0	0	-2	0	0	1	1	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	-3	-0.3%
27-Jun	0	0	-1	0	0	0	-1	0	0	1	1	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	-1	-0.1%
28-Jun	0	0	-1	0	0	0	-1	0	0	1	1	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	-1	-0.1%
29-Jun	0	0	-1	0	0	0	-1	0	0	2	2	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	2	0.2%
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	2	10	0.8%
2-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	8	0.7%
3-Jul	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	4	0	10	14	0	38	3.2%	
4-Jul	3	10	8	2	4	3	6	1	0	1	0	3	2	0	1	0	8	1	1	7	3	9	21	7	101	8.4%	
5-Jul	3	20	16	0	8	6	12	2	0	2	0	6	4	0	2	0	12	2	0	10	6	8	28	14	161	13.5%	
6-Jul	6	10	2	8	6	8	6	0	0	0	6	0	0	4	0	0	14	4	4	4	10	10	2	6	110	9.2%	
7-Jul	14	4	8	0	0	10	16	2	2	2	2	0	0	0	0	0	10	0	2	4	4	18	12	2	112	9.4%	
8-Jul	8	6	4	4	2	6	0	4	2	4	2	0	0	0	0	0	2	2	2	4	12	8	0	6	78	6.5%	
9-Jul	6	4	2	-2	2	0	6	4	2	6	2	2	0	4	2	4	0	2	0	0	0	0	0	0	46	3.8%	
10-Jul	0	4	0	0	2	4	2	0	0	2	2	2	0	0	2	0	0	10	4	10	4	8	0	0	56	4.7%	
11-Jul	0	2	0	0	0	2	0	0	0	0	2	2	2	8	0	2	0	2	2	0	2	2	0	0	30	2.5%	
12-Jul	0	2	2	0	2	2	2	2	6	4	2	0	6	0	2	3	3	2	2	3	4	1	2	3	55	4.6%	
13-Jul	1	1	1	2	16	6	2	4	3	2	2	2	3	2	2	3	3	2	2	3	6	2	4	2	76	6.3%	
14-Jul	2	0	0	2	0	2	2	0	0	0	2	4	0	4	4	4	6	2	4	4	8	2	2	4	58	4.8%	
15-Jul	2	6	6	14	2	4	8	0	10	2	0	0	0	4	4	2	2	6	2	2	2	0	0	0	78	6.5%	
16-Jul	0	0	2	4	-2	2	4	2	0	4	0	0	2	4	0	4	2	0	0	0	0	0	0	0	28	2.3%	
17-Jul	2	0	0	0	0	10	0	0	2	0	0	0	4	2	0	0	2	0	0	0	4	0	0	0	26	2.2%	
18-Jul	0	0	0	0	0	4	-2	0	0	0	0	0	4	0	0	0	2	0	4	2	2	0	2	18	1.5%		
19-Jul	8	0	0	2	0	0	2	0	0	0	0	2	2	1	4	0	4	0	2	4	1	1	1	36	3.0%		
20-Jul	4	0	0	1	0	1	-3	2	1	0	0	0	2	2	2	8	0	6	0	0	6	0	2	0	40	3.3%	
21-Jul	0	0	0	0	2	4	4	0	0	0	0	4	0	0	0	0	2	0	2	2	0	2	4	26	2.2%		
22-Jul	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	-2	0	4	0	0	0	0	8	0.7%		
23-Jul	0	0	0	2	0	0	4	0	0	0	0	0	0	4	0	0	-2	0	0	-2	0	0	0	0	6	0.5%	
24-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0.3%	
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
Total =	65	75	31	46	42	73	72	27	30	38	29	21	31	42	22	29	68	49	25	61	85	85	90	61	1,197		
	5.4%	6.3%	2.6%	3.8%	3.5%	6.1%	6.0%	2.3%	2.5%	3.2%	2.4%	1.8%	2.6%	3.5%	1.8%	2.4%	5.7%	4.1%	2.1%	5.1%	7.1%	7.1%	7.5%	5.1%	100.0%		

Table 5. Expanded daily hourly coho salmon migration past the North River counting tower, Norton Sound, 1996.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
Start of the counting season																										0	0.0%	
16-Jun																											0	0.0%
17-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
18-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
19-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
22-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
29-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Jul	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5%
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.2%
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	0.3%
13-Jul	0	2	0	0	4	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	17	1.4%
14-Jul	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	12	1.0%	
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	2	0	0	0	0	2	12	1.0%	
16-Jul	4	0	0	0	4	0	0	0	0	2	0	2	0	0	0	2	2	2	0	2	0	0	0	0	2	20	1.6%	
17-Jul	4	0	0	2	0	0	0	0	0	0	2	0	2	4	0	0	2	6	2	0	6	0	0	0	30	2.4%		
18-Jul	0	0	0	0	4	2	6	0	0	4	0	0	0	0	2	2	4	0	2	2	0	6	12	46	3.7%			
19-Jul	20	16	8	0	0	2	2	6	0	0	5	2	0	2	5	6	10	10	3	5	5	5	9	9	130	10.6%		
20-Jul	11	8	7	2	0	8	5	4	2	2	5	2	0	2	10	10	18	16	6	8	8	10	12	6	162	13.2%		
21-Jul	2	0	6	4	0	14	8	2	4	4	6	4	0	4	2	6	0	6	12	4	20	12	20	12	152	12.4%		
22-Jul	0	4	0	0	2	4	6	2	4	0	2	0	-2	2	0	8	12	4	8	8	6	14	4	88	7.2%			
23-Jul	28	24	8	2	0	14	20	10	2	2	0	0	0	0	4	36	38	40	20	12	8	8	28	12	316	25.7%		
24-Jul	12	4	10	4	0	4	2	2	6	2	0	0	6	0	2	18	8	34	8	10	16	4	12	14	178	14.5%		
25-Jul	12	2	10	4	12	4	4	2	0	0	0	0													54	4.4%		
	93	64	55	18	20	54	49	44	18	14	22	10	10	6	27	84	88	130	69	57	72	45	107	73	1,229			
	7.6%	5.2%	4.5%	1.5%	1.6%	4.4%	4.0%	3.6%	1.5%	1.1%	1.8%	0.8%	0.8%	0.5%	2.2%	6.8%	7.2%	10.6%	5.6%	4.6%	5.9%	3.7%	8.7%	5.9%	100.0%			

Table 6. Reported hourly chum salmon observations at the North River counting tower, Norton Sound, 1996

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
16-Jun																										0	0.0%
17-Jun	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	16	0.2%
18-Jun	0	0	-4	-2	-4	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-12	-0.2%
19-Jun	0	0	0	-12	-4	-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-22	-0.3%
20-Jun	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	0.1%
21-Jun	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0%
22-Jun																										0	0.0%
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	2	0	0.0%
24-Jun	62	56	8	34	12	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	174	2.2%
25-Jun	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	0							10	0.1%
26-Jun																										0	0.0%
27-Jun																										0	0.0%
28-Jun																										0	0.0%
29-Jun																										0	0.1%
30-Jun	2	6	18	6	0	2	2	0	0	0	2	0	0	0	-2	0	0	-2	0	2	2	0	8	0	46	0.6%	
1-Jul	0	18	14	72	2	0	2	0	-2	0	0	0	2	0	0	0	2	0	4	2	-2	20	14	14	162	2.0%	
2-Jul	4	2	6	0	-2	0	0	0	0	0	0	0	2	0	0	10	30	8	32	38	10	14	86	0	240	3.0%	
3-Jul	24	30	20	14	4	0	0	2	0	0	0	0	0	0	0	2	4	6	26	24	32	340	256	64	848	10.6%	
4-Jul																										0	0.0%
5-Jul	122	112	8	4	8	12	8	0	4	0	0	2	0	0	20	40	22	90	124	80	80	60	46	842	10.6%		
6-Jul	76	78	36	20	34	30	16	8	0	0	0	0	2	2	8	6	28	24	24	6	26	18	38	76	556	7.0%	
7-Jul	44	42	24	20	18	40	32	12	0	2	0	2	0	2	6	0	34	2	6	26	30	46	48	94	530	6.7%	
8-Jul	122	86	16	18	34	18	12	4	2	16	0	0	0	0	4	2	8	14	16	12	32	18	2	32	468	5.9%	
9-Jul	20	22	8	0	2	4	8	10	0	4	0	4	0	0	0	0	2	34	6	0	-2	0	2	0	124	1.6%	
10-Jul	42	4	0	6	8	4	0	2	0	2	0	0	0	0	2	4	4	16	38	22	14	46	4	12	230	2.9%	
11-Jul	22	10	8	4	2	8	2	2	0	2	4	2	2	0	2	8	8	4	18	58	22	46	42	66	342	4.3%	
12-Jul	8	18	14	4	12	20	12	14	12	2	8	0	6	6											136	1.7%	
13-Jul																										350	4.4%
14-Jul	12	12	6	2	10	30	10	14	10	6	4	10	6	0	0	8	2	10	8	18	20	12	10	46	266	3.3%	
15-Jul	24	22	18	8	0	14	78	28	14	2	2	0	0	8	14	8	8	10	14	46	28	14	12	16	388	4.9%	
16-Jul	24	16	6	16	16	44	38	10	4	-2	2	0	4	0	4	4	4	2	2	2	6	2	12	218	2.7%		
17-Jul	2	8	0	0	0	16	18	0	2	6	0	2	2	2	2	2	2	4	2	12	8	4	10	6	110	1.4%	
18-Jul	14	8	6	10	2	6	14	12	4	0	6	0	0	2	4	4	0	8	6	10	24	42	38	150	370	4.6%	
19-Jul	134	108	32	8	2	22	8	16	2	0															332	4.2%	
20-Jul																										98	1.2%
21-Jul	2	2	10	2	16	2	40	20	4	4	4	0	0	0	0	0	2	4	2	24	20	18	36	212	2.7%		
22-Jul	16	22	8	8	4	4	28	18	0	2	0	0	0	0	-2	0	4	28	12	60	24	10	18	26	290	3.6%	
23-Jul	36	14	38	12	2	24	12	8	2	2	0	0	0	0	6	22	18	14	26	18	8	38	6	22	328	4.1%	
24-Jul	8	22	4	8	14	16	6	0	8	8	0	6	4	0	2	2	2	0	12	28	10	26	20	8	2	214	2.7%
25-Jul	8	14	4	22	6	2	12	8	6	-2	2	0													82	1.0%	
Total	714	744	414	310	228	344	416	262	68	58	34	26	32	22	56	106	208	232	378	512	476	854	722	748	7,964		
	9.0%	9.3%	5.2%	3.9%	2.9%	4.3%	5.2%	3.3%	0.9%	0.7%	0.4%	0.3%	0.4%	0.3%	0.7%	1.3%	2.6%	2.9%	4.7%	6.4%	6.0%	10.7%	9.1%	9.4%	100.0%		

Table 7. Reported hourly pink salmon observations at the North River counting tower, Norton Sound, 1996

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
Start of the counting season																												
16-Jun																											0	0.0%
17-Jun	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0.0%	
18-Jun	0	0	0	0	0	0	0	-2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0%	
19-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
22-Jun																										4	2	6.00%
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	50	56.00%	
24-Jun	68	18	0	0	10	0	0	0	0	0	2	0	0	0	0	0	0	4	0	0	0	4	-2	10	0	114	0.0%	
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0						2	0.0%		
26-Jun																										0	0.0%	
27-Jun																										0	0.0%	
28-Jun																										0	0.0%	
29-Jun																										8	32.4%	
30-Jun	0	28	28	26	0	0	0	0	0	-4	0	0	0	-10	0	0	6	10	8	106	44	16	86	344	0.1%			
1-Jul	6	34	24	88	-2	4	0	0	-2	0	4	0	2	2	0	4	26	44	82	86	30	160	60	102	754	0.3%		
2-Jul	50	60	16	0	6	2	0	0	0	2	6	30	16	6	4	12	20	50	116	160	70	42	198	0	866	0.3%		
3-Jul	222	130	20	26	54	16	36	8	10	2	0	24	4	4	32	30	34	64	106	180	214	996	986	408	3,606	1.3%		
4-Jul																										0	0.0%	
5-Jul	808	658	94	244	590	702	640	96	40	8	38	44	24	110	716	982	436	1,420	5,396	5,120	4,648	4,554	4,892	32,260	11.3%			
6-Jul	6,992	7,890	3,524	1,436	2,158	3,366	2,640	704	-96	-174	24	60	22	16	108	270	980	2,154	3,838	658	5,406	4,652	4,694	9,248	60,570	21.3%		
7-Jul	5,032	5,474	1,318	376	264	662	1,548	736	264	90	18	4	10	42	346	0	1,580	40	454	942	1,638	3,338	7,106	3,470	34,752	12.2%		
8-Jul	3,624	2,722	1,016	366	560	1,060	1,810	352	564	828	10	0	0	0	0	8	370	742	508	652	4,730	774	446	3,820	24,962	8.8%		
9-Jul	3,366	1,304	830	54	82	208	1,320	720	222	204	190	174	22	28	128	222	272	3,052	464	42	172	116	312	260	13,764	4.8%		
10-Jul	3,002	464	56	50	134	178	80	130	10	18	38	64	6	10	66	150	168	762	1,606	1,712	2,106	2,028	566	1,694	15,098	5.3%		
11-Jul	2,612	346	70	44	98	218	352	146	68	112	134	78	170	18	274	338	320	200	514	2,038	1,572	948	1,236	2,174	14,080	5.0%		
12-Jul	838	358	284	62	134	412	552	444	318	268	78	102	250	52											4,152	1.5%		
13-Jul																										2,380	13,530	4.8%
14-Jul	612	614	238	42	74	564	376	328	174	210	156	190	118	124	134	168	296	412	556	1,102	982	676	746	682	9,574	3.4%		
15-Jul	1,280	836	212	38	56	454	1,158	638	236	134	56	32	44	76	194	350	434	460	596	1,032	828	312	328	430	10,214	3.6%		
16-Jul	738	794	518	110	216	616	926	638	188	-8	36	36	34	28	66	236	442	190	310	246	290	504	440	450	8,044	2.8%		
17-Jul	318	146	10	20	20	226	338	200	120	86	32	42	70	70	130	216	308	388	164	398	416	444	412	502	5,076	1.8%		
18-Jul	350	274	66	62	44	112	382	342	206	72	92	62	104	88	114	70	192	270	244	458	488	922	342	944	6,300	2.2%		
19-Jul	1,026	730	200	80	56	252	300	334	114	40															3,132	1.1%		
20-Jul																										4,386	1.5%	
21-Jul	366	92	58	26	26	88	448	298	202	212	68	40	8	52	78	178	342	354	214	396	540	508	812	392	5,798	2.0%		
22-Jul	308	284	154	70	72	96	386	216	96	64	36	36	22	32	80	108	162	388	372	618	478	448	210	308	5,044	1.8%		
23-Jul	340	106	86	74	106	250	310	162	22	36	12	8	14	-2	98	394	328	434	344	228	138	306	272	282	4,348	1.5%		
24-Jul	176	96	52	52	46	126	108	66	38	14	26	40	32	80	54	174	320	388	102	64	168	120	118	152	2,612	0.9%		
25-Jul	52	74	82	60	50	84	164	42	12	-4	12	6													634	0.2%		
	31,378	23,680	9,520	3,738	6,188	10,858	14,980	9,688	2,862	2,248	1,032	1,070	992	750	2,204	3,878	7,886	11,586	12,664	17,050	28,244	24,878	25,110	31,922	284,406			
	0%	8.3%	3.3%	1.3%	2.2%	3.8%	5.3%	3.4%	1.0%	0.8%	0.4%	0.4%	0.3%	0.3%	0.8%	1.4%	2.8%	4.1%	4.5%	6.0%	9.9%	8.7%	8.8%	11.2%	100.0%			

Table 8. Reported hourly king salmon observations at the North River counting tower, Norton Sound, 1996

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
Start of the counting season																										8	0.8%	
16-Jun																					0	0	4	0	0	4	8	-0.2%
17-Jun	2	0	0	0	0	2	-4	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	-2	-0.2%	
18-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	-2	-0.2%	
19-Jun	0	0	-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-0.4%	
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jun	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6	-0.6%	
22-Jun																									0	0	0.0%	
23-Jun	0	0	-4	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jun	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.4%	
25-Jun	0	0	-2	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-0.4%	
26-Jun																									0	0	0.0%	
27-Jun																									0	0	0.0%	
28-Jun																									0	0	0.0%	
29-Jun																					0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	2	2	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	2	0.2%	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	2	10	1.0%	
2-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	8	0.8%	
3-Jul	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	4	0	10	14	0	38	3.8%		
4-Jul																									0	0	0.0%	
5-Jul	20	16	0	8	6	12	2	0	2	0	6	4	0	2	0	12	2	0	10	6	8	28	14	158	15.7%			
6-Jul	6	10	2	8	6	8	6	0	0	0	6	0	0	4	0	0	14	4	4	4	10	10	2	6	110	10.9%		
7-Jul	14	4	8	0	0	10	16	2	2	2	0	0	0	0	0	10	0	2	4	4	18	12	2	112	11.1%			
8-Jul	8	6	4	4	2	6	0	4	2	4	2	0	0	0	0	0	2	2	2	4	12	8	0	6	78	7.8%		
9-Jul	6	4	2	-2	2	0	6	4	2	6	2	2	0	4	2	4	0	2	0	0	0	0	0	0	46	4.6%		
10-Jul	0	4	0	0	2	4	2	0	0	2	2	2	0	0	2	0	0	10	4	10	4	8	0	0	56	5.6%		
11-Jul	0	2	0	0	0	2	0	0	0	0	2	2	2	8	0	2	0	2	0	2	0	0	0	4	30	3.0%		
12-Jul	0	2	2	0	2	2	2	2	6	4	2	0	6	0											30	3.0%		
13-Jul		2	16	6	2	4														6	2	4	2	44	4.4%			
14-Jul	2	0	0	2	0	2	0	0	0	2	4	0	4	4	4	6	2	4	4	8	2	2	4	58	5.8%			
15-Jul	2	6	6	14	2	4	8	0	10	2	0	0	0	4	4	2	2	6	2	2	2	0	0	0	78	7.8%		
16-Jul	0	0	2	4	-2	2	4	2	0	4	0	0	2	4	0	4	2	0	0	0	0	0	0	0	28	2.8%		
17-Jul	2	0	0	0	0	10	0	0	2	0	0	0	4	2	0	0	2	0	0	0	4	0	0	0	26	2.6%		
18-Jul	0	0	0	0	0	4	-2	0	0	0	0	0	0	4	0	0	0	2	0	4	2	2	0	2	18	1.8%		
19-Jul	8	0	0	2	0	0	2	0	2	0															14	1.4%		
20-Jul																	2	8	0	6	0	0	6	0	24	2.4%		
21-Jul	0	0	0	0	0	2	4	4	0	0	0	4	0	0	0	0	2	0	2	2	0	2	4	26	2.6%			
22-Jul	2	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	-2	0	4	0	0	0	8	0.8%		
23-Jul	0	0	0	2	0	0	4	0	0	0	0	0	0	0	4	0	0	0	-2	0	-2	0	0	0	6	0.6%		
24-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0.4%			
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
Total	54	64	30	42	38	68	68	24	26	30	22	16	22	36	16	24	54	40	20	48	74	74	66	50	1,006			
	5.4%	6.4%	3.0%	4.2%	3.8%	6.8%	6.8%	2.4%	2.6%	3.0%	2.2%	1.6%	2.2%	3.6%	1.6%	2.4%	5.4%	4.0%	2.0%	4.8%	7.4%	7.4%	6.6%	5.0%	100.0%			

Table 9. Reported hourly coho salmon observations at the North River counting tower, Norton Sound, 1996

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total			
16-Jun																			0	0	0	0	0	0	0	0	0.0%		
17-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
18-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
19-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
20-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
21-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
22-Jun																									0	0	0.0%		
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
24-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
26-Jun																									0	0.0%			
27-Jun																									0	0.0%			
28-Jun																									0	0.0%			
29-Jun																			0	0	0	0	0	0	0	0.0%			
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
4-Jul																									0	0.0%			
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
9-Jul	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6%			
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.2%			
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%			
13-Jul		0	4	2	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1%			
14-Jul	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	1.1%			
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	2	0	0	0	0	2	1.1%			
16-Jul	4	0	0	0	4	0	0	0	0	0	2	0	2	0	0	0	2	2	2	0	0	0	0	0	2	1.8%			
17-Jul	4	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	2	6	2	0	6	0	2.8%		
18-Jul	0	0	0	0	4	2	6	0	0	4	0	0	0	0	2	2	4	0	2	2	0	0	6	12	46	4.2%			
19-Jul	20	18	8	0	0	2	2	6	0	0															54	5.0%			
20-Jul																		10	10	18	16	6	8	8	10	12	6	104	9.6%
21-Jul	2	0	6	4	0	14	8	2	4	4	6	4	0	4	2	6	0	6	12	4	20	12	20	12	152	14.0%			
22-Jul	0	4	0	0	0	2	4	6	2	4	0	2	0	-2	2	0	8	12	4	8	8	6	14	4	88	8.1%			
23-Jul	28	24	8	2	0	14	20	10	2	2	0	0	0	0	4	36	38	40	20	12	8	8	28	12	316	29.1%			
24-Jul	12	4	10	4	0	4	2	2	6	2	0	0	6	0	2	18	8	34	8	10	16	4	12	14	178	16.4%			
25-Jul	12	2	10	4	12	4	4	4	2	0	0	0													54	5.0%			
Total	82	54	48	16	20	46	44	40	16	12	12	6	10	2	22	78	78	120	60	52	66	40	98	64	1,086				
	7.6%	5.0%	4.4%	1.5%	1.8%	4.2%	4.1%	3.7%	1.5%	1.1%	1.1%	0.6%	0.9%	0.2%	2.0%	7.2%	7.2%	11.0%	5.5%	4.8%	6.1%	3.7%	9.0%	5.9%	100.0%				

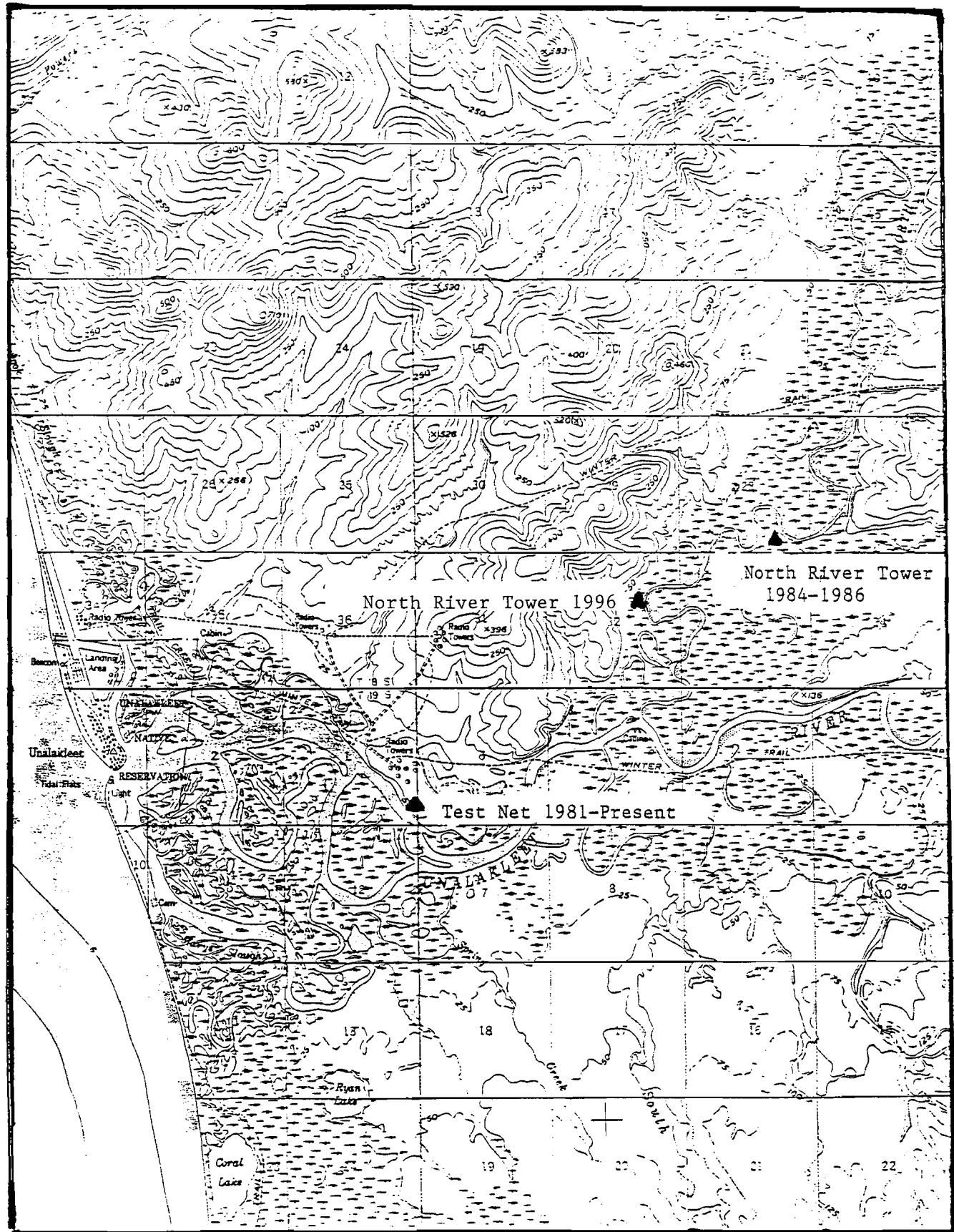


Figure 1. Area location map of the North River counting tower project site, Norton Sound, 1996.

Figure 2. Cumulative migration of all salmon species past the North River counting tower, Norton Sound, 1996.

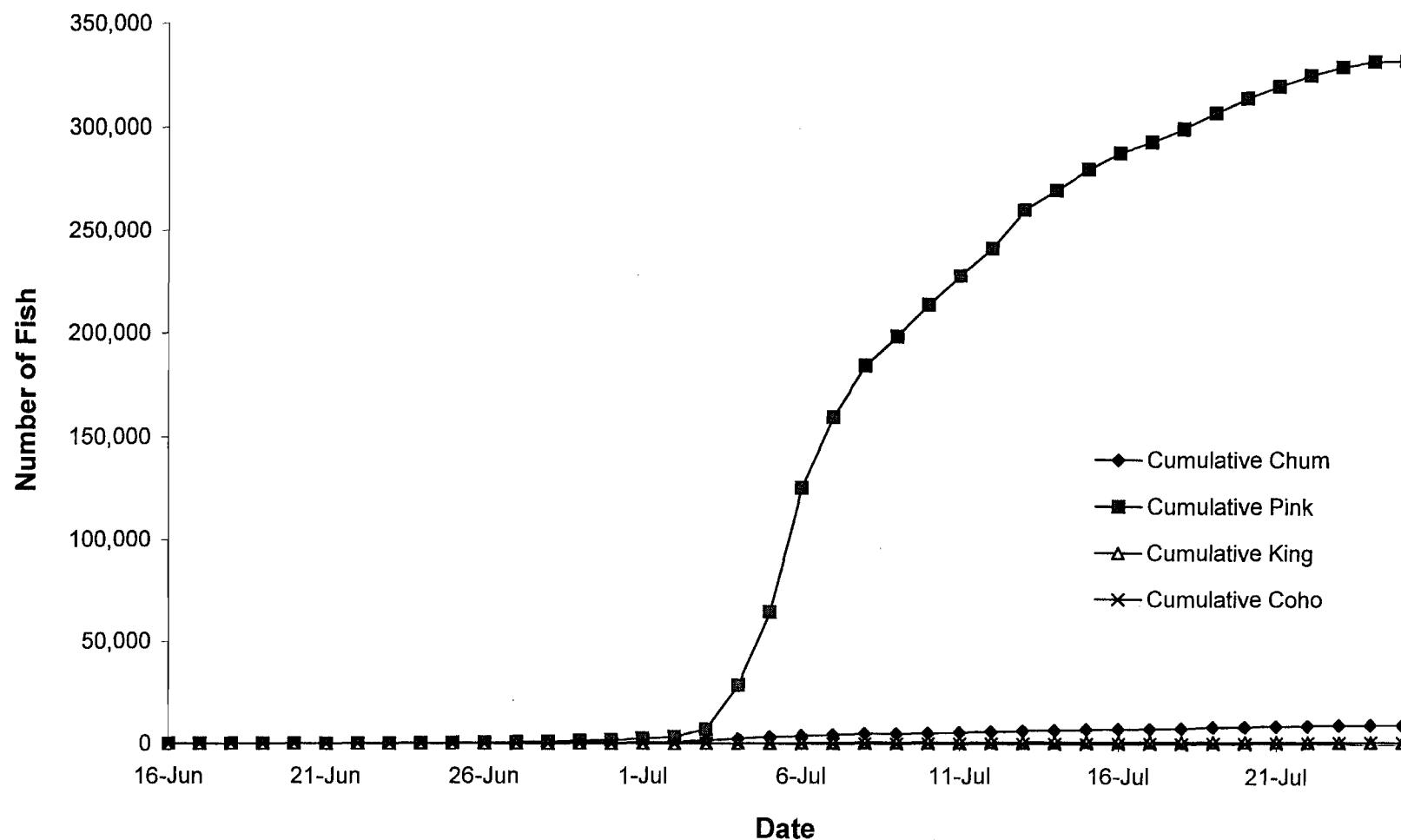


Figure 3. Daily chum salmon migration past the North River counting tower, Norton Sound, 1996.

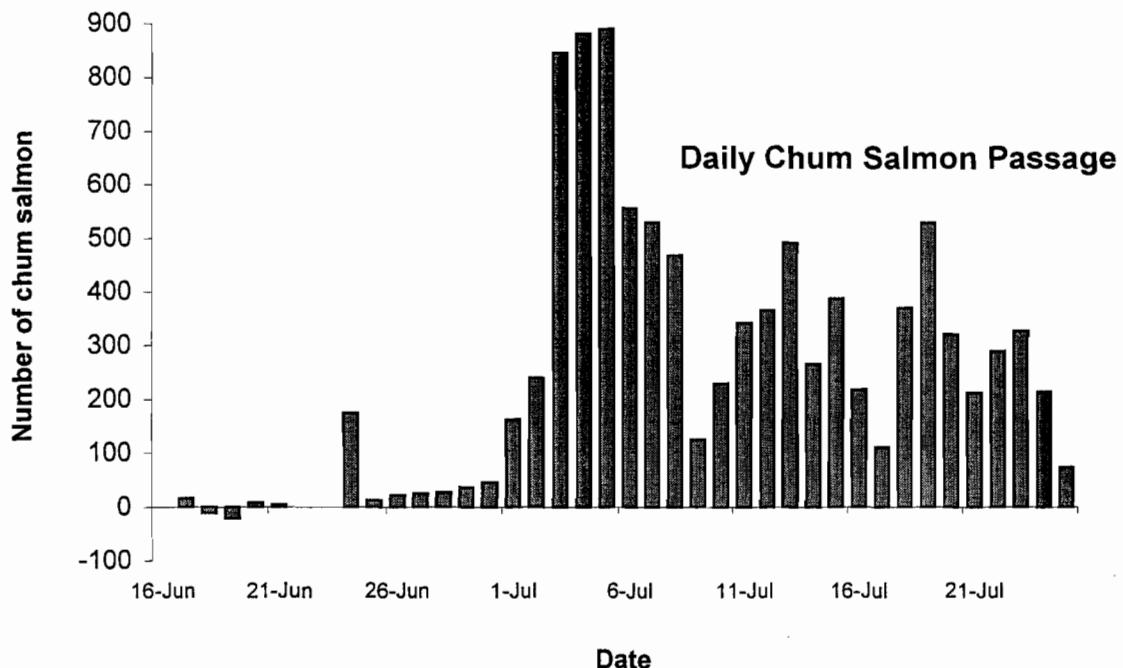


Figure 4. Cumulative chum salmon migration past the North River counting tower, Norton Sound, 1996.

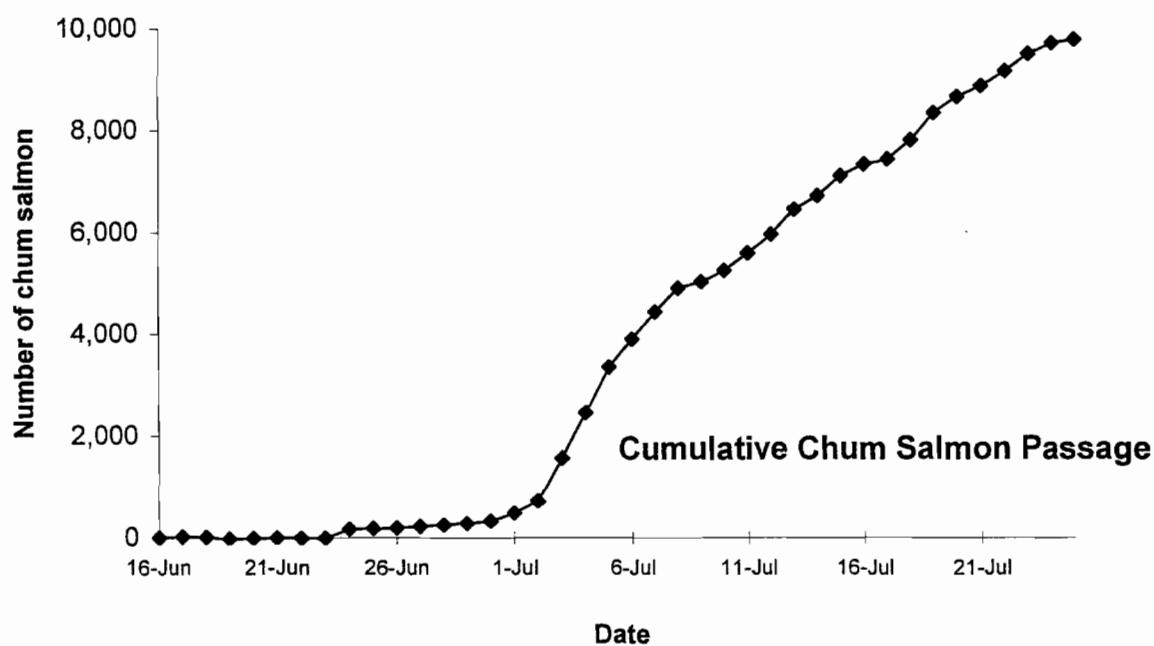


Figure 5. Daily pink salmon migration past the North River counting tower, Norton Sound, 1996.

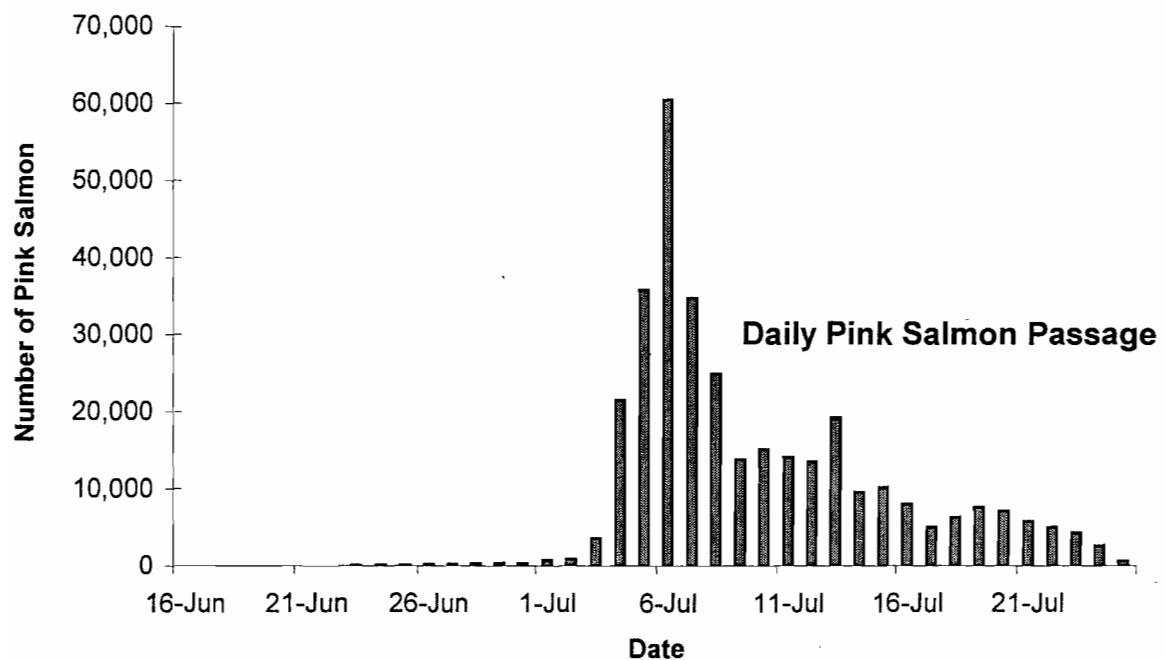


Figure 6. Cumulative pink salmon migration past the North River counting tower, Norton Sound, 1996.

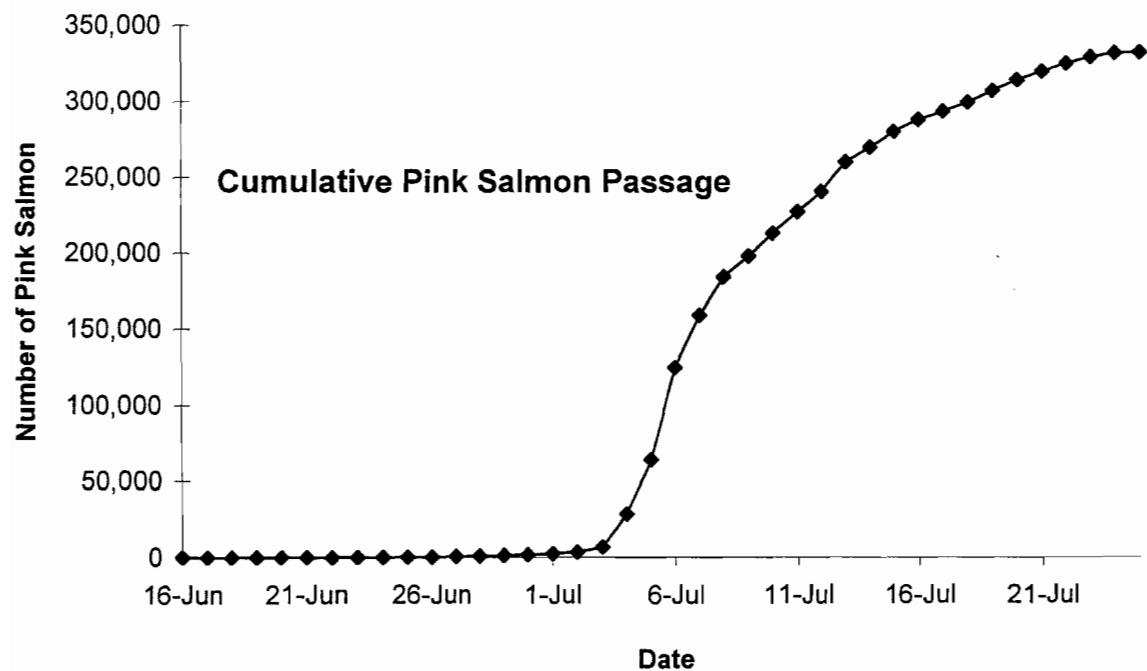


Figure 7. Daily king salmon migration past the North River counting tower, Norton Sound, 1996.

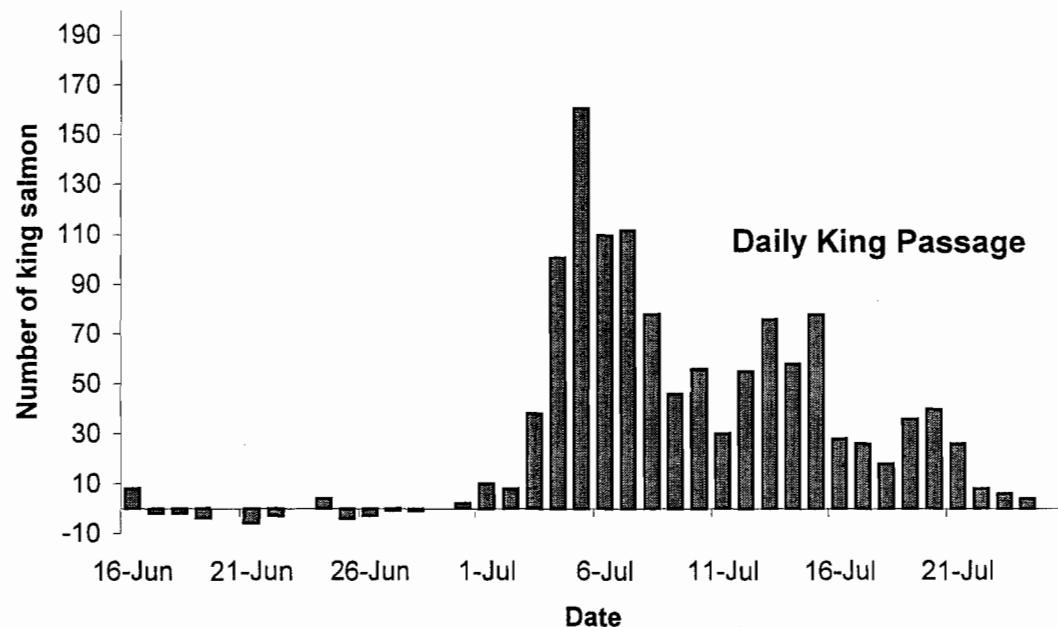


Figure 8. Cumulative king salmon migration past the North River counting tower, Norton Sound, 1996.

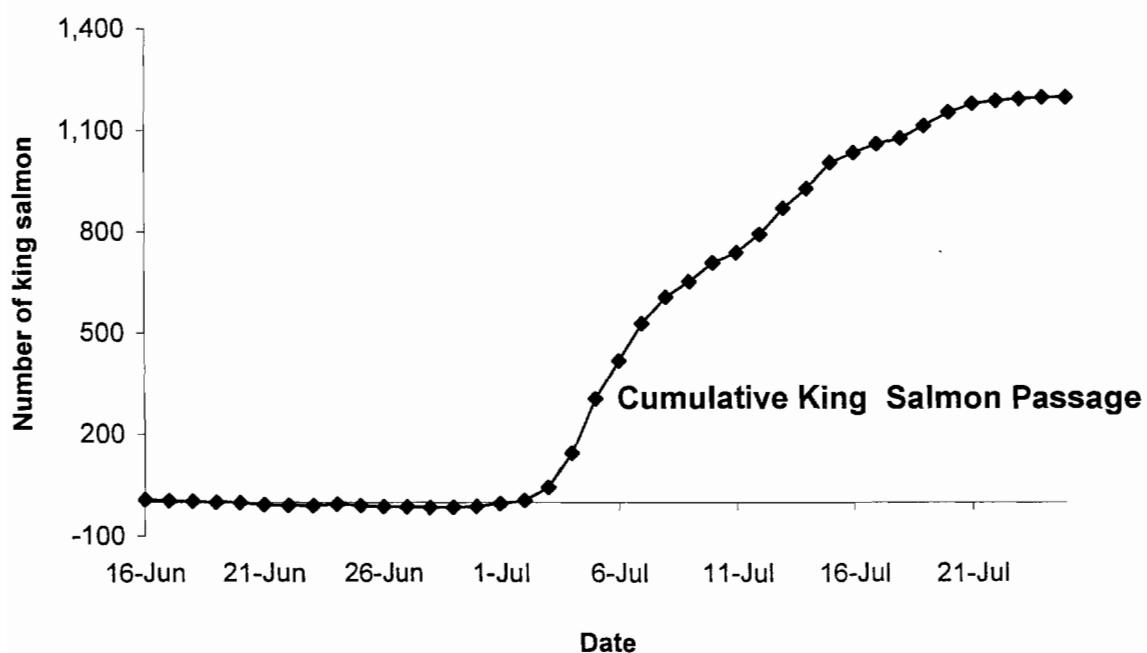


Figure 9. Daily coho salmon migration past the North River counting tower, Norton Sound, 1996.

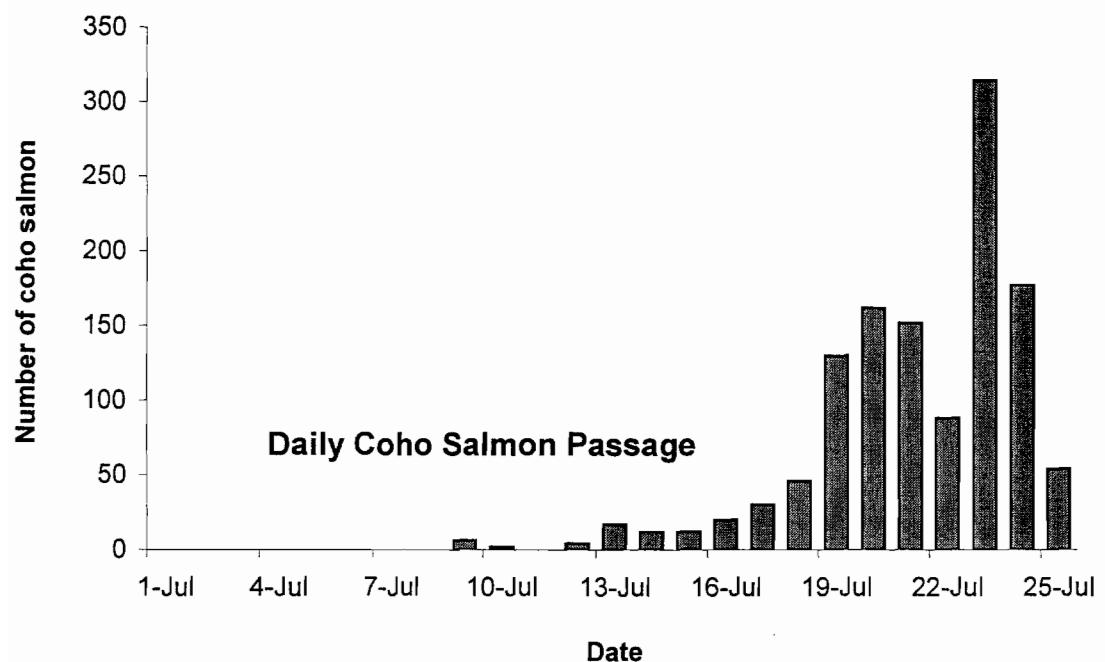


Figure 10. Cumulative coho salmon migration past the North River counting tower, Norton Sound, 1996.

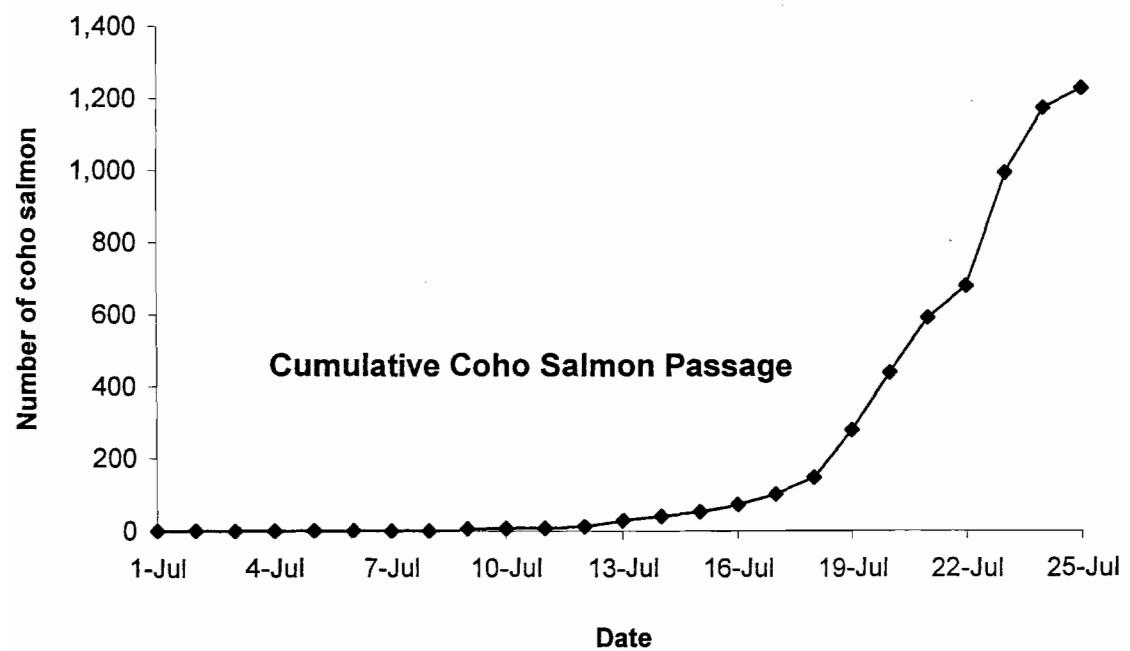


Figure 11. Diurnal pattern of chum salmon migration past the North River counting tower, Norton Sound, 1996.

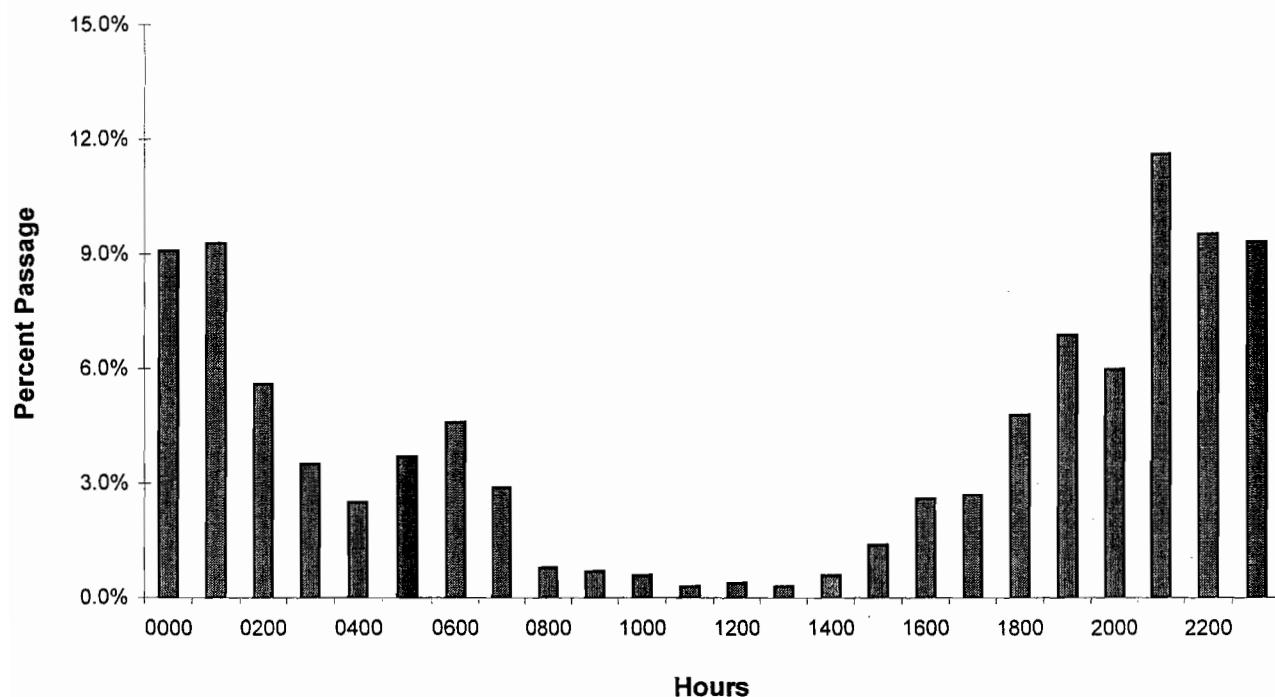


Figure 12. Diurnal pattern of pink salmon migration past the North River counting tower, Norton Sound, 1996.

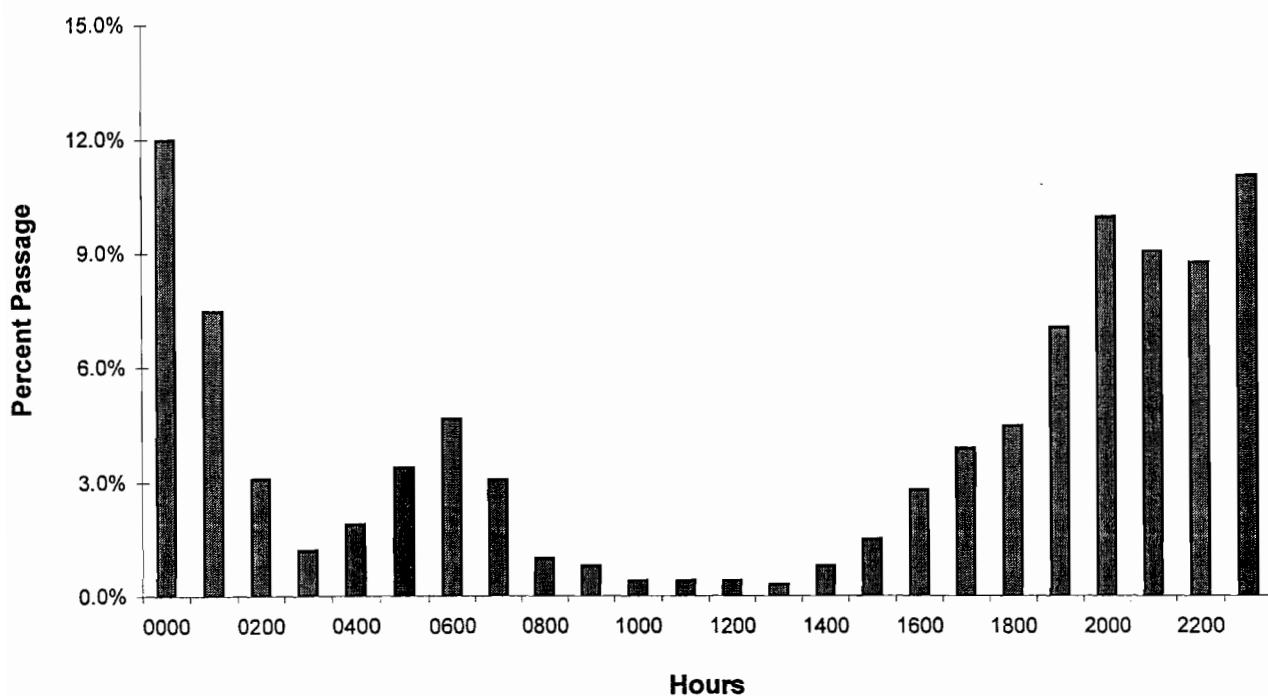


Figure 13. Diurnal pattern of king salmon migration past the North River counting tower, Norton Sound, 1996.

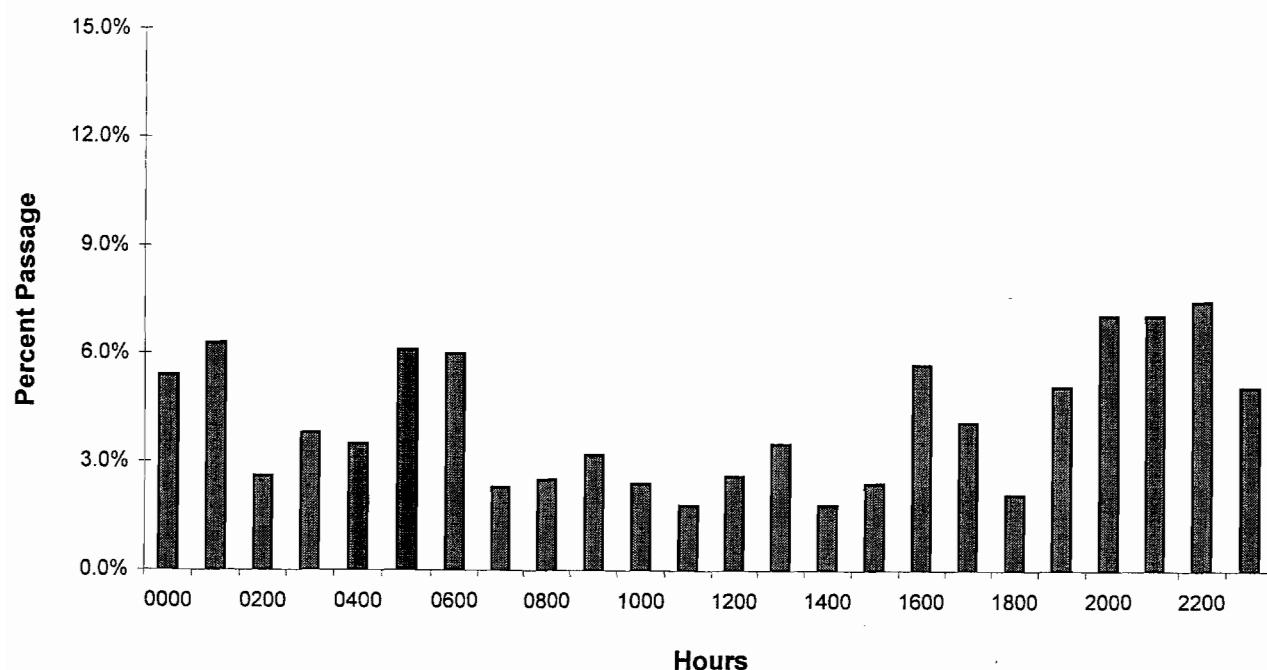


Figure 14. Diurnal pattern of coho salmon migration past the North River counting tower, Norton Sound, 1996.

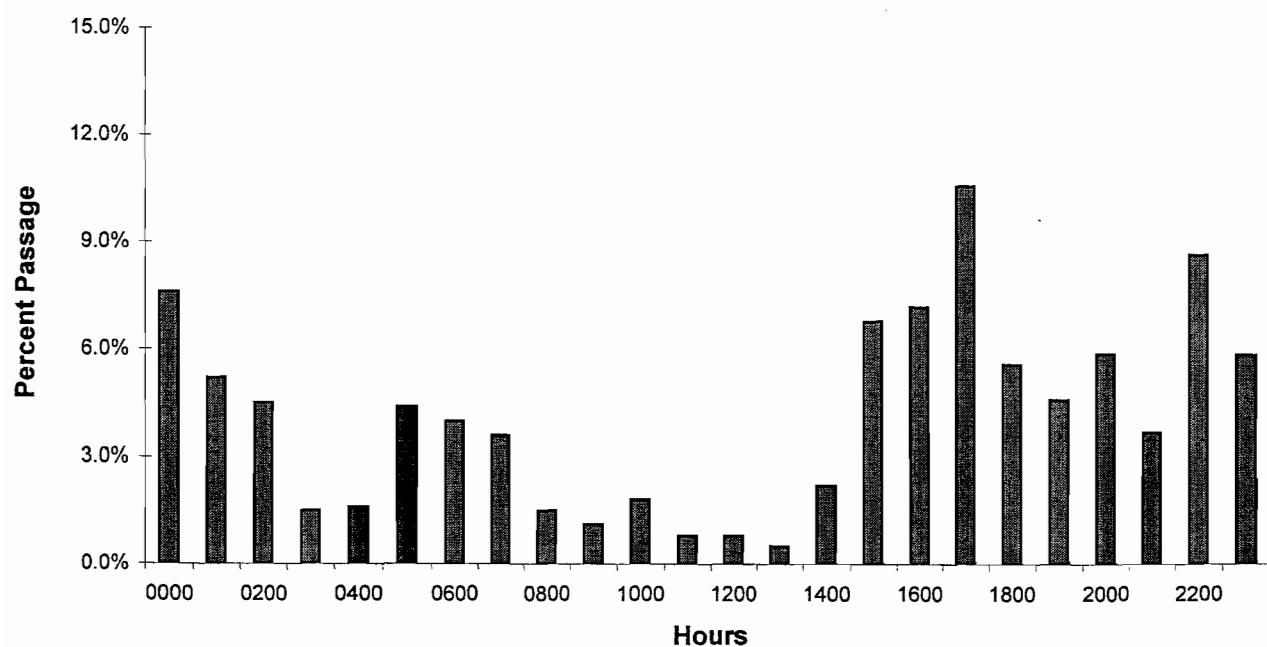


Figure 15. Cumulative chum salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996.

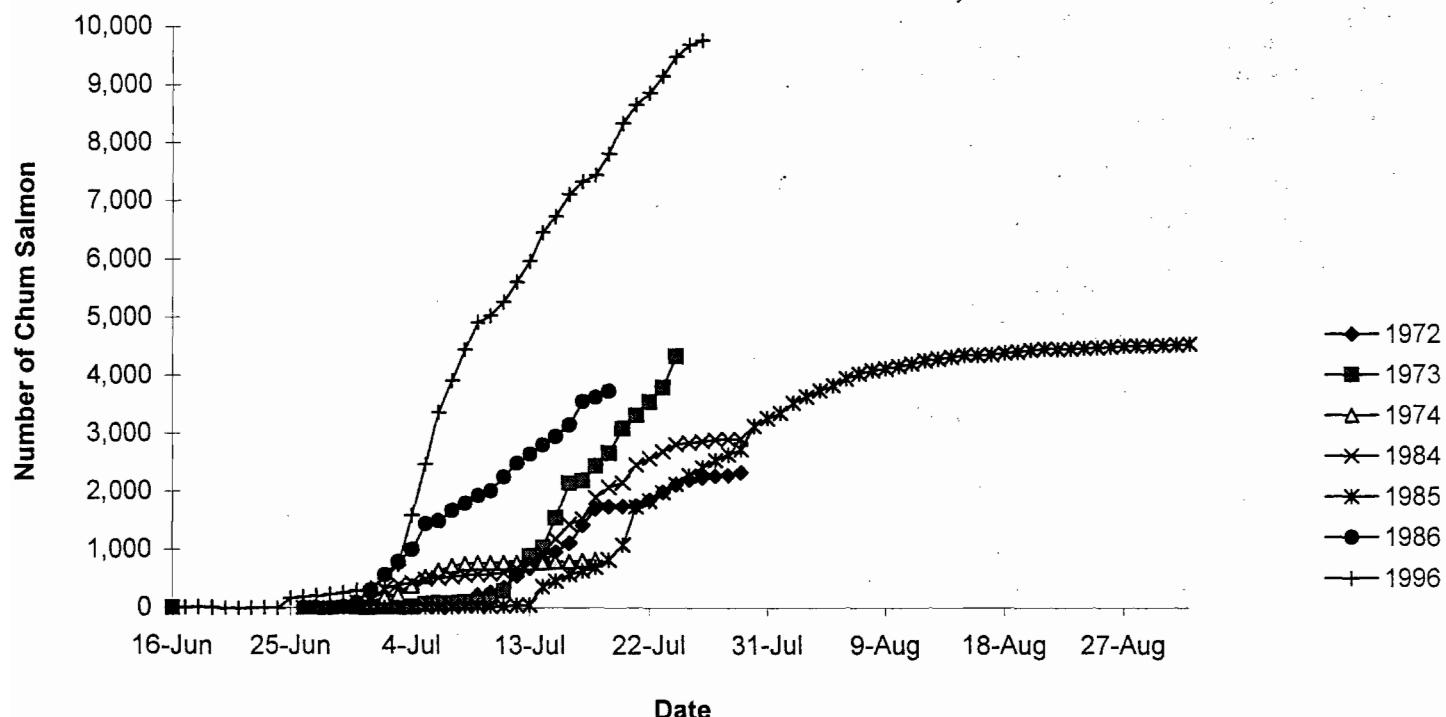


Figure 16. Even year cumulative pink salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996.

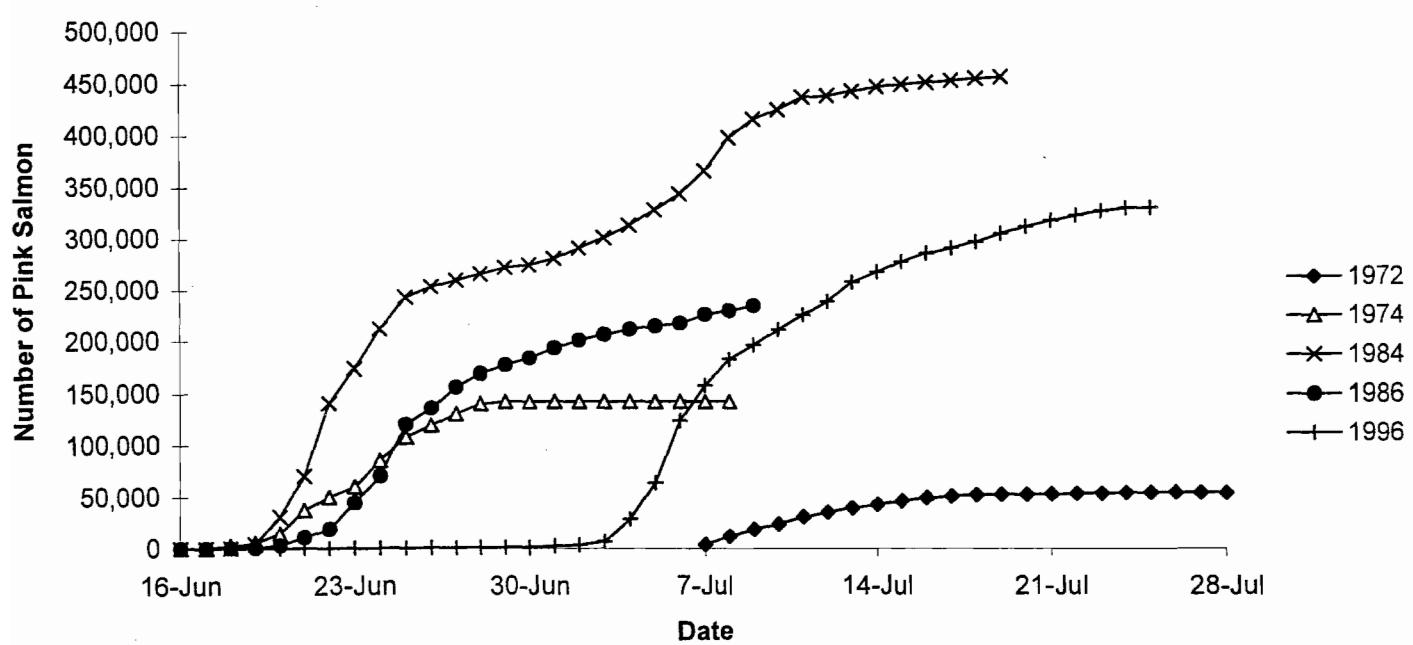


Figure 17. Odd year cumulative pink salmon passage past the North River counting tower, Norton Sound, 1973 and 1985.

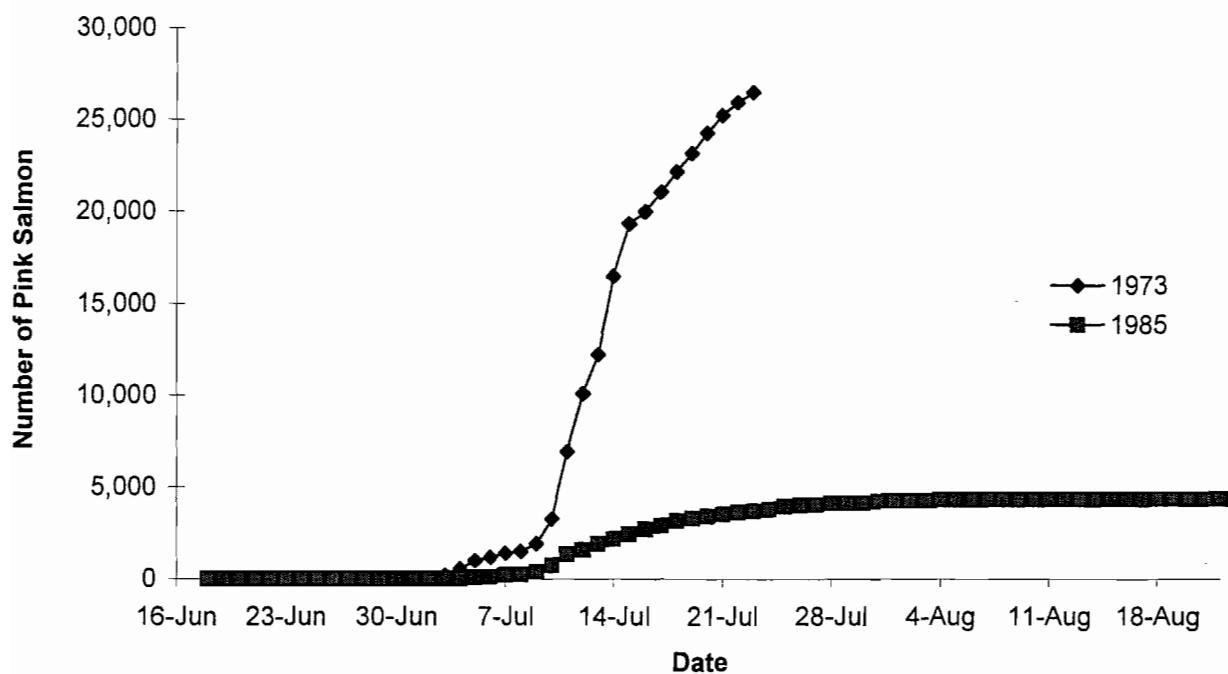


Figure 18. Cumulative king salmon passage past the North River counting tower, Norton Sound, 1972-1974, 1984-1986, and 1996.

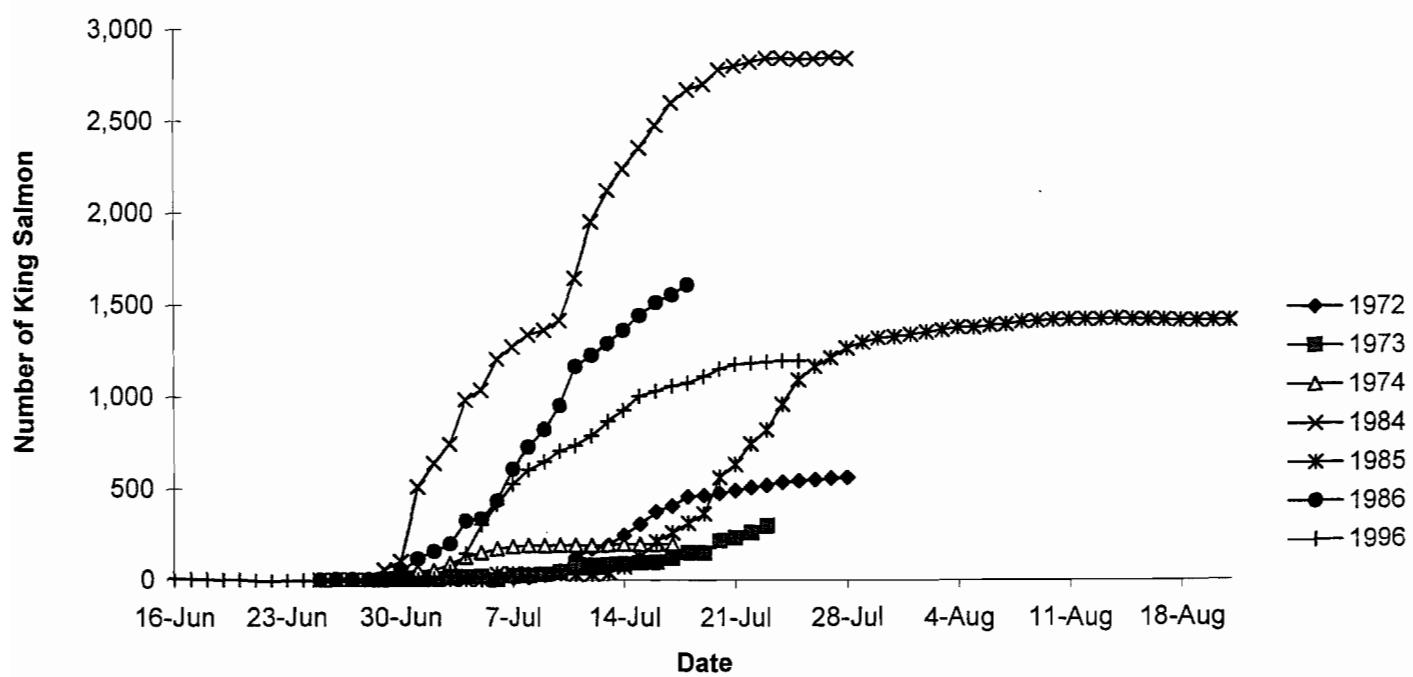
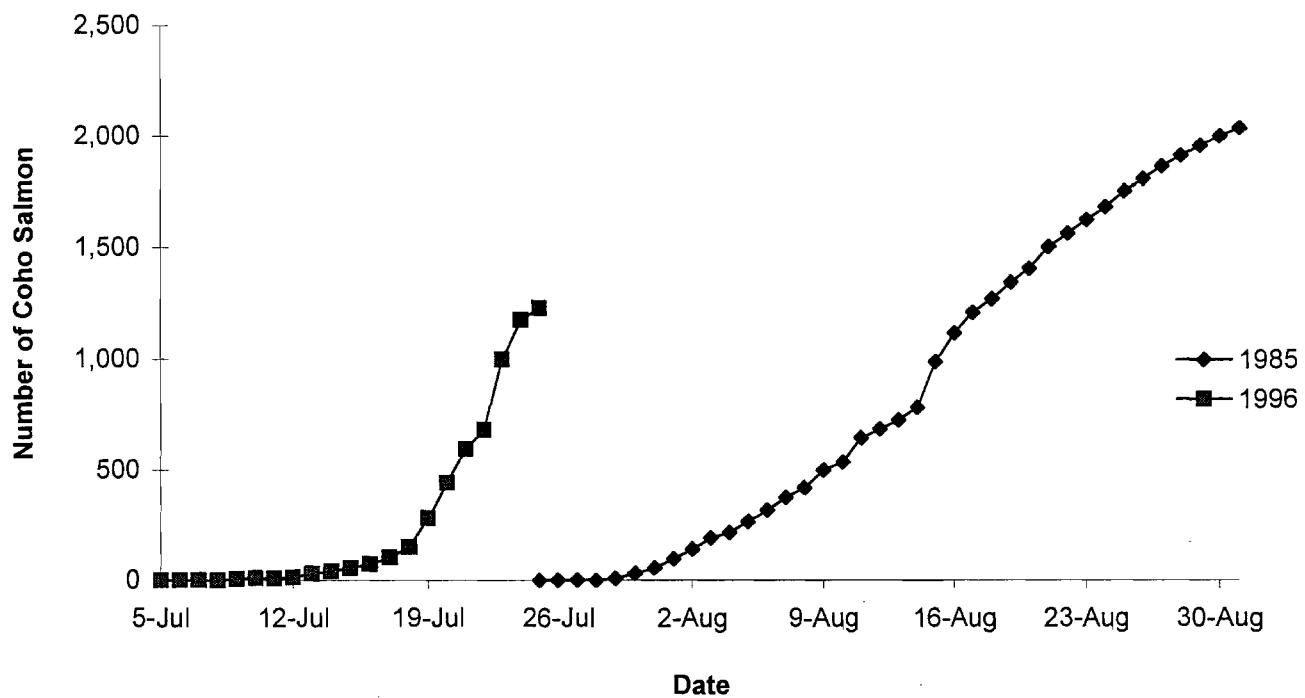


Figure 19. Cumulative coho salmon passage past the North River countiung tower, Norton Sound, 1985 and 1996.



Appendix Table 1. Daily cumulative chum salmon escapement past the North River counting tower,
Norton Sound, 1972-1974, 1984-1986 and 1996.

Date	1972	1973	1974	1984	1985	1986	1996
16-Jun							0
17-Jun							16
18-Jun							4
19-Jun							-18
20-Jun							-10
21-Jun							-6
22-Jun							-6
23-Jun							-6
24-Jun							168
25-Jun		0	0		0		180
26-Jun		0	1		0		201
27-Jun		19	1	0	0		226
28-Jun		23	1	0	14		253
29-Jun	0	33	88	0	82		289
30-Jun	0	91	124	0	308		335
1-Jul	9	177	320	0	562		497
2-Jul	9	217	395	0	784		737
3-Jul	19	369	431	0	999		1,585
4-Jul	59	533	489	0	1,439		2,468
5-Jul	72	633	511	0	1,485		3,360
6-Jul	79	717	533	15	1,668		3,916
7-Jul	96	88	751	551	20	1,792	4,446
8-Jul	215	96	769	570	23	1,921	4,914
9-Jul	272	121	776	579	25	2,011	5,038
10-Jul	344	288	776	600	25	2,251	5,268
11-Jul	548	681	776	675	38	2,485	5,610
12-Jul	687	891	776	776	52	2,655	5,976
13-Jul	777	1,041	780	952	364	2,807	6,468
14-Jul	958	1,545	793	1,184	458	2,953	6,734
15-Jul	1,114	2,144	798	1,437	573	3,158	7,122
16-Jul	1,418	2,190	810	1,531	633	3,552	7,340
17-Jul	1,696	2,436	826	1,895	694	3,628	7,450
18-Jul	1,742	2,666		2,072	826	3,738	7,820
19-Jul	1,742	3,087		2,150	1,077		8,350
20-Jul	1,754	3,310		2,461	1,730		8,671
21-Jul	1,859	3,546		2,572	1,834		8,883
22-Jul	1,990	3,798		2,692	1,985		9,173
23-Jul	2,119	4,334		2,812	2,126		9,501
24-Jul	2,204			2,846	2,276		9,715
25-Jul	2,241			2,870	2,413		9,789
26-Jul	2,268			2,896	2,539		
27-Jul	2,285			2,908	2,643		
28-Jul	2,332			2,915	2,733		
29-Jul					3,129		
30-Jul					3,261		
31-Jul					3,353		
1-Aug					3,526		
2-Aug					3,638		
3-Aug					3,750		
4-Aug					3,839		
5-Aug					3,959		
6-Aug					4,040		
7-Aug					4,098		
8-Aug					4,129		
9-Aug					4,176		
10-Aug					4,212		
11-Aug					4,265		
12-Aug					4,301		
13-Aug					4,326		
14-Aug					4,362		
15-Aug					4,366		
16-Aug					4,377		
17-Aug					4,406		
18-Aug					4,425		
19-Aug					4,457		
20-Aug					4,472		
21-Aug					4,473		
22-Aug					4,480		
23-Aug					4,488		
24-Aug					4,499		
25-Aug					4,512		
26-Aug					4,520		
27-Aug					4,526		
28-Aug					4,531		
29-Aug					4,537		
30-Aug					4,550		
31-Aug					4,567		

Appendix Table 2. Daily cumulative pink salmon escapement past the North River counting tower,
Norton Sound, 1972-1974, 1984-1986, and 1996

Date	1972	1973	1974	1984	1985	1986	1996
16-Jun			111	27		0	0
17-Jun			371	27		20	2
18-Jun			2,410	379	0	42	4
19-Jun			5,366	4,201	0	542	4
20-Jun			14,140	30,301	0	3,162	4
21-Jun			36,909	70,057	0	10,648	7
22-Jun			49,445	141,035	0	18,685	13
23-Jun			59,699	175,065	0	44,335	69
24-Jun			85,613	213,513	0	70,567	183
25-Jun			108,778	244,864	0	120,907	277
26-Jun			120,023	255,068	0	136,727	466
27-Jun			131,573	261,472	0	157,516	672
28-Jun			141,361	267,837	0	170,730	958
29-Jun		0	143,621	274,201	0	179,083	1,339
30-Jun		0	143,692	276,696	0	185,913	1,683
1-Jul	49	143,724	283,051	0	195,468	2,437	
2-Jul	83	143,764	293,200	11	202,944	3,303	
3-Jul	187	143,764	303,493	13	208,597	6,909	
4-Jul	539	143,772	315,069	23	213,705	28,338	
5-Jul	1,004	143,777	330,354	79	217,106	64,205	
6-Jul	1,196	143,783	345,473	135	219,354	124,775	
7-Jul	3,790	1,394	143,785	368,228	201	228,168	159,527
8-Jul	11,743	1,504	143,789	400,054	250	231,798	184,489
9-Jul	18,374	1,931		417,711	407	236,487	198,253
10-Jul	23,589	3,276		426,787	753		213,351
11-Jul	30,323	6,925		438,645	1,350		227,431
12-Jul	34,836	10,115		440,167	1,591		240,976
13-Jul	39,428	12,265		444,602	1,917		260,174
14-Jul	42,550	16,510		449,037	2,179		269,748
15-Jul	46,046	19,384		451,423	2,439		279,962
16-Jul	49,000	20,028		453,398	2,701		288,006
17-Jul	50,801	21,094		455,204	2,924		293,082
18-Jul	52,079	22,192		456,875	3,159		299,382
19-Jul	52,303	23,205		458,387	3,301		306,986
20-Jul	52,512	24,323			3,431		314,103
21-Jul	52,956	25,265			3,534		319,901
22-Jul	53,409	25,976			3,627		324,945
23-Jul	53,965	26,542			3,704		329,293
24-Jul	54,320				3,783		331,905
25-Jul	54,545				3,940		332,539
26-Jul	54,710				4,009		
27-Jul	54,763				4,052		
28-Jul	54,934				4,112		
29-Jul					4,135		
30-Jul					4,158		
31-Jul					4,228		
1-Aug					4,269		
2-Aug					4,284		
3-Aug					4,295		
4-Aug					4,322		
5-Aug					4,322		
6-Aug					4,330		
7-Aug					4,334		
8-Aug					4,337		
9-Aug					4,337		
10-Aug					4,344		
11-Aug					4,351		
12-Aug					4,351		
13-Aug					4,349		
14-Aug					4,350		
15-Aug					4,354		
16-Aug					4,355		
17-Aug					4,356		
18-Aug					4,357		
19-Aug					4,358		
20-Aug					4,359		
21-Aug					4,360		
22-Aug					4,360		

Appendix Table 3. Daily cumulative king salmon escapement past the North River counting tower,
Norton Sound, 1972-1974, 1984-1986, and 1996.

Date	1972	1973	1974	1984	1985	1986	1996
16-Jun							8
17-Jun							6
18-Jun							4
19-Jun							0
20-Jun							0
21-Jun							-6
22-Jun							-9
23-Jun							-9
24-Jun							-5
25-Jun			0	0		0	-9
26-Jun			0	0		2	-12
27-Jun			1	0	0	2	-13
28-Jun			3	0	0	2	-14
29-Jun	1	6	55		0	8	-14
30-Jun	1	42	101		0	42	-12
1-Jul	1	48	513		0	116	-2
2-Jul	6	53	642		0	158	6
3-Jul	10	88	745		0	198	44
4-Jul	16	125	984		0	326	145
5-Jul	19	151	1,038		1	338	306
6-Jul	2	173	1,207		35	438	416
7-Jul	11	22	184	1,274	34	609	528
8-Jul	15	26	191	1,341	34	731	606
9-Jul	30	33	191	1,367	34	827	652
10-Jul	50	43	192	1,418	34	953	708
11-Jul	126	71	192	1,648	32	1,167	738
12-Jul	172	82	192	1,957	33	1,230	793
13-Jul	194	83	193	2,126	39	1,294	869
14-Jul	245	87	196	2,242	71	1,364	927
15-Jul	309	94	196	2,358	126	1,446	1,005
16-Jul	376	97	196	2,481	213	1,518	1,033
17-Jul	406	119	196	2,602	260	1,557	1,059
18-Jul	458	150		2,674	314	1,613	1,077
19-Jul	466	150		2,706	366		1,113
20-Jul	475	216		2,784	563		1,153
21-Jul	492	231		2,803	635		1,179
22-Jul	508	262		2,825	748		1,187
23-Jul	521	298		2,847	824		1,193
24-Jul	535			2,845	958		1,197
25-Jul	544			2,840	1,093		1,197
26-Jul	551			2,844	1,168		
27-Jul	556			2,848	1,213		
28-Jul	561			2,844	1,266		
29-Jul					1,300		
30-Jul					1,322		
31-Jul					1,328		
1-Aug					1,341		
2-Aug					1,356		
3-Aug					1,366		
4-Aug					1,381		
5-Aug					1,382		
6-Aug					1,392		
7-Aug					1,397		
8-Aug					1,414		
9-Aug					1,418		
10-Aug					1,423		
11-Aug					1,427		
12-Aug					1,429		
13-Aug					1,429		
14-Aug					1,432		
15-Aug					1,428		
16-Aug					1,428		
17-Aug					1,425		
18-Aug					1,424		
19-Aug					1,424		
20-Aug					1,425		
21-Aug					1,426		

Appendix Table 4. Daily cumulative coho salmon escapement past the North River counting tower,
Norton Sound, 1985 and 1996

Date	1985	1996
5-Jul		0
6-Jul		0
7-Jul		0
8-Jul		0
9-Jul		6
10-Jul		8
11-Jul		8
12-Jul		12
13-Jul		29
14-Jul		41
15-Jul		53
16-Jul		73
17-Jul		103
18-Jul		149
19-Jul		279
20-Jul		441
21-Jul		593
22-Jul		681
23-Jul		997
24-Jul		1,175
25-Jul	0	1,229
26-Jul	0	
27-Jul	0	
28-Jul	0	
29-Jul	8	
30-Jul	31	
31-Jul	57	
1-Aug	97	
2-Aug	140	
3-Aug	193	
4-Aug	216	
5-Aug	265	
6-Aug	319	
7-Aug	374	
8-Aug	419	
9-Aug	500	
10-Aug	536	
11-Aug	645	
12-Aug	686	
13-Aug	725	
14-Aug	781	
15-Aug	988	
16-Aug	1,117	
17-Aug	1,211	
18-Aug	1,272	
19-Aug	1,345	
20-Aug	1,409	
21-Aug	1,507	
22-Aug	1,568	
23-Aug	1,631	
24-Aug	1,688	
25-Aug	1,759	
26-Aug	1,816	
27-Aug	1,872	
28-Aug	1,920	
29-Aug	1,966	
30-Aug	2,010	
31-Aug	2,045	